STAFF PERCEPTIONS AND ATTITUDES ON INCIDENT REPORTING AND ITS MANAGEMENT: A STUDY OF HOSPITALS IN UAE

Thesis Submitted for the Award of the Degree of

DOCTOR OF PHILOSOPHY

in

Management

By

Sravan Kumar M Y

Registration Number: 41800695

Supervised By

Dr. Pretty Bhalla (UID – 21576)

Professor

Mittal School of Business

LOVELY PROFESSIONAL UNIVERSITY, PUNJAB

2026

DECLARATION

I, hereby declared that the presented work in the thesis entitled "Staff Perceptions And Attitudes On Incident Reporting And Its Management: A Study Of Hospitals In UAE" in fulfilment of degree of **Doctor of Philosophy (Ph. D.)** is outcome of research work carried out by me under the supervision of Dr. Pretty Bhalla, working as Professor, in the Mittal School of Business of Lovely Professional University, Punjab, India. In keeping with general practice of reporting scientific observations, due acknowledgements have been made whenever work described here has been based on findings of other investigator. This work has not been submitted in part or full to any other University or Institute for the award of any degree.

(Signature of Scholar)

Name: Sravan Kumar M Y

Registration Number: 41800695

Department/school: Mittal School of Business

Lovely Professional University,

Punjab, India

CERTIFICATE

(To be filled by Supervisor)

This is to certify that the work reported in the Ph. D. thesis entitled "Staff Perceptions And Attitudes On Incident Reporting And Its Management: A Study Of Hospitals In UAE" submitted in fulfillment of the requirement for the award of degree of **Doctor of Philosophy (Ph.D.)** in the Management, Mittal School of Business, is a research work carried out by Sravan Kumar M Y, Registration No. 41800695, is bonafide record of his/her original work carried out under my supervision and that no part of thesis has been submitted for any other degree, diploma or equivalent course.

Signature of Supervisor

Name: Pretty Bhalla

Designation: Professor

Department/school: Mittal School of Business

University: Lovely Professional University

ABSTRACT

Background

Patient safety is a foundational principle in healthcare, yet adverse events continue to occur across healthcare systems globally. Incident reporting is recognized as a critical mechanism for identifying safety hazards, enabling system improvements, and fostering a culture of transparency.

Globally, studies have highlighted that effective incident reporting systems contribute to reductions in preventable harm, strengthen clinical governance, and foster a safety culture grounded in transparency and accountability. Despite these benefits, underreporting is a universal challenge, with estimates suggesting that as many as 50–96% of incidents remain undocumented. Barriers to reporting often include fear of blame or punitive consequences, lack of clarity regarding what constitutes a reportable incident, insufficient feedback, and competing workload pressures.

In the United Arab Emirates (UAE), the healthcare sector has undergone rapid expansion and accreditation-driven reforms in the past two decades. Accredited hospitals are mandated to implement structured incident reporting systems, aligned with both international best practices and national regulatory frameworks such as those of the Dubai Health Authority (DHA), Department of Health – Abu Dhabi (DOH), and the Ministry of Health (MOH) in Northern Emirates. Nevertheless, anecdotal and empirical evidence points to ongoing challenges with staff engagement in reporting. Given the UAE's multicultural workforce, varied organizational cultures, and differing levels of safety maturity, understanding staff perceptions and attitudes toward incident reporting is both timely and critical.

Purpose

This study titled *"Staff Perceptions and Attitudes on Incident Reporting and Its Management: A Study of Hospitals in UAE"* was designed to explore how both individual and institutional factors influence incident reporting behaviours among healthcare staff. It seeks to assess the interplay between personal attitudes (e.g., fear of repercussions/consequences, motivation, perceived benefits) and organizational mechanisms (e.g., leadership support, risk management policies, feedback processes) in shaping reporting behaviours.

This is based on the three important factors identified as below

- **Evidence Gap**: Few UAE-based studies comprehensively integrate quantitative and qualitative methods to explore staff perspectives on incident reporting, especially across both clinical and non-clinical roles.
- **Policy Relevance**: Results have direct implications for national patient safety strategies and hospital accreditation compliance.
- **Cultural Context**: The UAE's diverse healthcare workforce presents unique dynamics around authority, communication, and safety culture, which may not align with findings from Western settings.

By integrating survey-based statistical modelling with in-depth qualitative narratives, the study aims to provide a contextually grounded, empirically validated framework for enhancing incident reporting systems.

Objectives

This research set out to systematically explore staff perceptions and attitudes toward incident reporting within UAE healthcare settings. The first objective was to assess, through structured surveys, how both clinical and non-clinical staff across selected hospitals view and engage with the process of reporting incidents. Building on these insights, the second objective sought to identify and categorize the top five barriers to incident reporting, drawing on both quantitative survey findings and qualitative interview data. A third aim was to evaluate how organizational culture and leadership styles influence reporting behaviours, with particular attention to the role of senior staff in fostering or inhibiting a reporting culture. Additionally, the study focussed on to measure the influence of key motivators—such as ethical responsibility and the provision of organizational feedback—on the frequency of reporting. Finally, the research sought to formulate a series of implementable steps, evidence-based action plans for boosting incident reporting systems, grounded in empirical analysis and shaped by the perspectives of relevant stakeholders.

Hypotheses

In line with existing literature and preliminary field observations, the study tested seven primary hypotheses regarding factors influencing staff willingness/readiness to disclose incidents. The first hypothesis (H1) proposed that the characteristics of the incident itself—

such as its severity, type, or potential impact—would have a significant effect on whether staff decide to report. The second hypothesis (H2) suggested that fear-related barriers, including concerns over blame, punitive action, or reputational damage, would significantly influence reporting behaviour. The third hypothesis (H3) posited that training and awareness initiatives focused on incidents and reporting procedures would have a measurable effect on reporting rates. The fourth hypothesis (H4) addressed motivational factors, predicting that staff who perceive clear benefits from reporting—such as process improvement and organizational learning—would be more inclined to report. The fifth hypothesis (H5) proposed that the presence and quality of organizational risk management policies and procedures would significantly affect staff reporting behaviour. The sixth hypothesis (H6) emphasized the role of leadership and supervisor support, predicting that visible encouragement and protection from leaders would positively influence reporting. Finally, the seventh hypothesis (H7) examined the techniques and procedures employed by Quality Department staff in managing incident reports, predicting that effective and transparent handling would significantly impact staff willingness to report.

Methods

The study adopted a sequential explanatory mixed-methods design underpinned by an interpretivist philosophy and inductive approach. This allowed the research to first establish statistical relationships through quantitative analysis, then contextualize and explain those findings via qualitative exploration.

Quantitative Phase:

- Instrument: A structured questionnaire with demographic items and Likert-scale questions.
- Development: Based on literature review and expert panel input; piloted for clarity and cultural appropriateness.
- Distribution: Administered online to healthcare professionals in accredited hospitals across all seven emirates.
- Sampling: Convenience sampling for surveys; target sample size calculated using Slovin's formula.
- Analysis: Descriptive statistics, Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA) using Partial Least Squares Structural Equation Modelling (PLS-SEM) to validate constructs and test hypotheses.

Qualitative Phase:

- Instrument: Semi-structured interview guide.
- Sampling: Purposive sampling of key informants (quality managers, senior clinicians, department heads).
- Analysis: Thematic analysis (Braun & Clarke, 2006), identifying recurring patterns related to barriers, enablers, and best practices.

Sampling

A total of 390 healthcare professionals contributed to the survey data, representing a diverse range of professional roles: nurses & healthcare assistants (25.9%), doctors (24.9%), non-clinical staff (24.6%), allied medical staff (16.9%), and laboratory/radiology technicians (7.7%). Respondents were predominantly from hospital settings (72.1%), with geographic representation from Dubai (26.2%), Abu Dhabi (22.6%), and other emirates. Work experience ranged from less than 1 year to over 10 years, ensuring perspectives from both newer and veteran staff. For the qualitative component, 30 healthcare leaders from various roles and emirates were interviewed.

Results

Descriptive Findings:

- High educational attainment among respondents (93.3% with bachelor's or higher).
- Strong preference (81%) for reporting incidents to the Quality Department via formal systems.
- Incident reporting perceived as part of professional responsibility by a majority, though some role uncertainty persists.

Exploratory Factor Analysis:

- Eight-factor model explaining 73.29% of variance:
    1. Fear of Reporting Barriers (17.14%)
    2. Quality Department Procedures (12.72%)
    3. Motivation to Report (11.98%)
    4. Incident Characteristics (8.21%)
    5. Willingness to Report (7.81%)
    6. Leadership and Supervisor Support (5.79%)
    7. Organizational Risk Management Support (5.31%)

8. Training and Awareness (4.33%)
9. **CFA & SEM Analysis**:
    - Fear of punitive consequences had a significant negative path coefficient with willingness to report ($p < 0.05$).
    - Organizational support and supervisor encouragement were positively and significantly associated with reporting frequency.
    - Motivation factors—particularly ethical duty and perceived learning benefits—were strong predictors of willingness to report.
    - Training and awareness indirectly influenced willingness to report through enhanced motivation.

Qualitative Insights:

- Leaders stressed the importance of timely feedback to reporters, reinforcing trust.
- Persistent barriers included workload pressures, unclear definitions of reportable incidents, and concerns over confidentiality.
- Successful units had visible leadership involvement and recognition for staff who reported incidents.

Discussion

This study reveals a complex interplay between personal., organizational., and cultural factors in incident reporting. While formal systems are widely trusted, fear of repercussions persists as a deterrent, even in accredited hospitals with stated non-punitive policies.

Motivation is strongly shaped by ethical considerations and the perceived value of reporting in improving care processes. However, without visible leadership endorsement and consistent feedback loops, motivation may wane.

Training is necessary but not sufficient—its impact is maximized when embedded in broader organizational strategies that emphasize psychological safety and continuous learning.

Conclusions

The study confirms that incident reporting behaviour in UAE hospitals is shaped by a complex interplay of individual fears, institutional culture, and system design. Fear of blame and punitive action remains a major deterrent, while organizational trust, feedback mechanisms, and ethical commitment are strong enablers. Mixed-method evidence supports a multi-pronged improvement strategy involving:

- Strengthening non-punitive policies.
- Enhancing leadership visibility in safety initiatives.
- Providing regular, structured feedback to reporters.
- Clarifying definitions of reportable incidents.
- Investing in targeted training programs.

Implications

Improving incident reporting requires not just better systems but also sustained cultural change. Hospital leadership in the UAE must integrate reporting into the broader safety and learning culture, ensuring staff see it as a shared responsibility rather than a personal risk. The validated eight-factor model from this study can guide policy makers and administrators in designing interventions tailored to their organizational context.

Preface/Acknowledgement:

This study was undertaken with a deep interest in exploring and contributing to the field, driven by both professional curiosity and a commitment to advancing knowledge in the subject area. The journey of completing this thesis has been both challenging and rewarding, and the completion of this work relied heavily on the encouragement, guidance, and assistance I have been provided along the way.

I owe my deepest gratitude to my guide, Dr. Pretty Bhalla, whose wisdom, patience, and encouragement have been my constant compass. Her guidance has not only shaped the direction of this thesis but also inspired me to think critically and aim higher.

To my wife, Remya Venugopalan, I will always be grateful for your patience, your understanding, and your faith in me. You stood by me through long hours and busy days, often putting my needs before your own. To my little daughter, Rithvika, your laughter and hugs reminded me why perseverance matters and made even the most stressful days brighter.

I am sincerely appreciative of the faculty members and evaluators at Lovely Professional University, whose valuable feedback and kind encouragement have strengthened my work. To my fellow teaching faculty in the UAE, thank you for being my sounding boards, cheerleaders, and sources of motivation when the path felt long.

Finally, to my friends, colleagues, and family members, thank you for always believing in me, even when I couldn't believe in myself and for celebrating even the smallest milestones along the way. This achievement is as much yours as it is mine.

Date of Submission: 23 Jan 2026

TABLE OF CONTENTS

Chapter 1: INTRODUCTION – p. 1

1.1 Background – p. 1

1.1.1 The Importance of Incident Reporting – p. 2

1.1.2 Global Challenges in Incident Reporting – p. 8

1.1.3 The Role of Organizational Culture – p. 11

1.1.4 Incident Reporting in the UAE – p. 14

1.1.5 Fear of Blame and Punishment – p. 14

1.1.6 Time Constraints and Workload – p. 16

1.1.7 Lack of Feedback and Perceived Impact – p. 17

1.1.8 Organizational Culture and Leadership – p. 19

1.1.9 Cultural and Linguistic Barriers – p. 23

1.10 Current Practices and Gaps – p. 26

1.2 Problem Statement – p. 28

1.2.1 Global Extent of the Problem – p. 28

1.2.2 Patient Safety and Incident Reporting in the UAE – p. 34

1.2.3 Need for a Proactive Approach – p. 36

1.3 Research Aim and Objectives – p. 39

1.4 Conceptual Framework – p. 39

1.5 Scope of the Study – p. 43

1.6 Justification of the Study – p. 45

Chapter 2: LITERATURE REVIEW – p. 48

2.1 Definitions and Global Trends – p. 48

2.2 Electronic incident Reporting Systems – p. 52

2.3 Connection to Patient Safety and Quality Improvement – p. 56

2.4 Staff Perceptions, Attitudes, and Organizational Influences – p. 62

2.5 Facilitators and Barriers to Incident Reporting – p. 66

2.6 Conceptual Framework – p. 72

2.6.1 Independent Variables – p. 73

2.6.2 Moderating Variables – p. 83

2.6.3 Dependent Variable – p. 88

2.6.4 Implications of Reporting Behaviour – p. 89
2.6.5 Integrative Perspective – p. 91
2.6.6 Applications of the Framework – p. 91
2.6.7 Conceptual model summary - p. 92
2.7 Context of UAE Healthcare – p. 93
2.8 Gaps in Literature – p. 96

Chapter 3: RESEARCH METHODOLOGY – p. 98
3.1 Research Philosophy – p. 98
3.2 Research Design – p. 98
3.2.1 Research Approach – p. 99
3.2.2 Methodological Choice – p. 99
3.2.3 Research Strategy – p. 100
3.3 Research Aim and Objectives – p. 100
3.4 Research Framework – p. 100
3.5 Questionnaire Design – p. 100
3.6 Data Collection Methods – p. 101
3.7 Sampling – p. 102
3.8 Ethical Considerations – p. 105
3.8.1 Informed Consent – p. 105
3.8.2 Privacy, Confidentiality, and Anonymity – p. 105
3.8.3 Voluntary Participation and the Right to Withdraw – p. 106
3.8.4 Respecting Cultural and Professional Contexts – p. 106
3.8.5 Data Handling and Protection – p. 106
3.8.6 Minimal Risk and Participant Comfort – p. 106
3.9 Data Analysis – p. 107

Chapter 4: RESULTS AND DISCUSSION– p. 108
4.1 Quantitative Data Analysis – p. 109
4.2 Descriptive Analysis – p. 109
4.2.1 Comparative Interpretation with Global Benchmarks and Rationale for Subgroup Analysis – p. 114
4.3 Exploratory Factor Analysis (EFA) – p. 116
4.4 Confirmatory Factor Analysis (CFA) – p. 127

4.5 Structural Equation Modelling – p. 134

4.6 Qualitative Interview Results – p. 141

4.7 Thematic Analysis – p. 145

4.8 Academic and Theoretical Implications – p. 159

Chapter 5: SUMMARY and CONCLUSION – p. 163

References – p. 172
Index – p. 202
Appendices – p. 206
List of Publications – p. 217
List of Conferences – p. 217

8. List of Tables

- Table 1. Educational Qualifications
- Table 2. Type of Healthcare Organization (HCO)
- Table 3. Emirates
- Table 4. Gender
- Table 5. Professional Position
- Table 6. Years of Experience in Current HCO
- Table 7. Primary Work Area in the Hospital
- Table 8. Preferred Person to Report Errors
- Table 9. Communalities Table
- Table 10. Total Variance Explained (After Varimax Rotation)
- Table 11. Rotated component matrix
- Table 12. Convergent Reliability & Validity
- Table 13. HTMT Ratio
- Table 14. Fornell Larcker Criterion
- Table 15. Hypothesis Testing using Structural equation modelling
- Table 16. Thematic analysis

9. List of Figures

- Figure 1 - Conceptual Framework
- Figure 2. Structural model
- Figure 3. Simple slope analysis

- Figure 4 - Incident Report Management Process

10. List of Appendices

- Survey questionnaire
- Interview questionnaire
- Process of conducting interviews
- Process of thematic analysis
- Permission to use the questionnaire from previous researcher

CHAPTERS:

1. Introduction
2. Review of Literature
3. Research Methodology
4. Results and Discussion
5. Summary and Conclusion

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Incident reporting is a fundamental component of modern healthcare systems, designed to identify and mitigate risks, improve processes, and enhance patient safety. Defined broadly, incident reporting encompasses the documentation of adverse events, errors, or near-miss incidents encountered in the course of healthcare delivery. The primary objective of incident reporting is not to assign blame but to enable organizations to learn from these occurrences and implement measures to prevent their recurrence (World Health Organization [WHO], 2020). Despite the clear benefits of incident reporting, healthcare systems globally face significant challenges in encouraging consistent and effective reporting practices among staff, which impacts on patient safety and quality outcome, and organizational transparency. An adverse event is commonly defined as "an unintended injury that results in temporary or permanent disability, death, or prolonged hospital stay and is caused by healthcare management rather than by the patient's underlying disease process" (Zegers et al., 2007). One important way to see how safe hospitals are for patients is to look at how often adverse events, or AEs, happen. "Adverse events are unexpected problems or injuries that happen because of medical care, not because of the patient's own illness". These problems can be serious—they may cause a patient to stay in the hospital longer, leave them with a disability, or in some cases even lead to death. By tracking and understanding these events, hospitals can learn where mistakes happen and take steps to make care safer for all patients (Brennan et al., 2004).

A 2010 report from the Office of Inspector General showed that about one (1) in seven (7) Medicare patients in hospitals (13.5%) had serious problems during their stay. These problems, called adverse events, were linked to longer hospital stays, the need for life-saving treatment, permanent disability, or even death. Another 1 in 7 patients (13.5%) had less serious problems, called temporary harm events, which still required extra treatment. For the report, researchers gathered hospital incident reports about these events and also spoke with hospital leaders and accreditation representatives to better understand the issue (Levinson, 2012). A study looked at medical records from 6,579 patients admitted to 13 general hospitals in the country of New Zealand in 1998. Researchers first screened the records and then had trained doctors review them carefully using a standard method. The patients in the study were very similar to the overall population of New Zealand public hospital patients, except that hospital stay lengths

were slightly different. About 13% of admissions in the hospitals are involved an adverse event, with nearly one-fifth of these happening outside the hospital., such as at a doctor's office, home, or private facility. Most adverse events caused only minor harm, and less than 15% led to permanent disability or death. However, adverse events had a big impact on hospital workload, adding an average of over nine extra days in the hospital for affected patients. There were no clear patterns by type of illness, but older patients were affected more often than younger ones (Davis et al., 2002).

Review of insurance claims against ambulance services utilization to see what kinds of problems caused injuries to patients or others. Researchers reviewed 326 claims from 2003–2004. The biggest issues were ambulance crashes or sudden vehicle movements (37%) and accidents while lifting or moving patients (36%). Fewer claims were about mistakes in medical care (12%) or problems during transport (8%). The injuries included deaths (17%), serious long-term harm (8%), and mostly minor injuries (76%). The average cost of these claims was about $17,000. The study shows that making ambulances safer on the road and improving how patients are handled could prevent many of these problems (Wang et al., 2008).

1.1.1 The Importance Of Incident Reporting

In recent decades, the healthcare sector has increasingly recognized the importance of incident reporting as a proactive approach to patient safety. The WHO emphasizes that a robust incident reporting system is critical to fostering a culture of safety and accountability in healthcare settings (WHO, 2020). An effective Incident Reporting System (IRS) is vital for improving care quality and patient safety, requiring staff buy-in, regular tracking of incident trends, and organization-wide sharing of lessons learned. This ensures continuous improvement, stronger safety practices, and better service delivery (Kumah et al., 2024). Incident reporting is one of the key ways hospitals can track, prevent, and reduce patient safety problems. Such systems play an important role in improving the quality of care and protecting patients. This study aimed to explore the barriers that stop nurses from reporting incidents and to find solutions from their point of view (Abeer et al., 2020). Errors and adverse events are common in healthcare, with an estimated 10% of hospitalized patients globally experiencing harm due to adverse events during their course of care (Panagioti et al., 2019). These incidents, which include medication errors, surgical complications, and equipment failures, can contribute to severe patient outcomes, increased healthcare costs, and reputational damage for healthcare organizations (Makary & Daniel, 2016). Therefore, incident reporting serves as a vital tool to

identify systemic vulnerabilities, implement corrective actions, and measure the effectiveness of safety interventions. Maintaining patient safety remains one of the foremost challenges in healthcare, and medication errors (MEs) are a leading concern worldwide. These errors can harm patients' health, damage the nurse–patient relationship, and increase hospital stays. To better understand this issue, a qualitative descriptive study was done in three hospitals in Amman, Jordan (Ali et al., 2021).

Patient harm is a serious global health problem, currently ranked the 14th leading cause of disease burden worldwide, similar to illnesses like tuberculosis and malaria. Most of this burden affects developing countries. Research on the costs of patient harm has mostly focused on hospitals in developed countries, where its impact is similar when compared with chronic diseases such as multiple sclerosis or certain cancers. The financial consequences are significant: about 15% of all hospital activity and spending is directly linked to adverse events. The most common and costly types include conditions like VTE (venous thromboembolism), pressure sores, and hospital-acquired infections. Less is known about harm in primary or outpatient care, but studies show that wrong or delayed diagnoses are a major issue. In fact, some research suggests that every adult in the United States may experience harm from a diagnostic error at some point. Indirect costs, such as lost productivity and reduced trust in healthcare, further add to the burden. For example, in 2008, medical errors in the U.S. were estimated to cost nearly USD 1 trillion. The good news is that many adverse events are preventable. The cost of prevention is far lower than the cost of errors. Improving patient safety, such as in U.S. Medicare hospitals, has led to substantial savings—about USD 28 billion between 2010 and 2015. This shows that investing in safety not only protects patients but also reduces financial burden (Klazinga & Slawomirski, 2022).

Patient safety culture is defined as "the extent to which an organization's culture supports and promotes patient safety. It refers to the values, beliefs, and norms that are shared by healthcare practitioners and other staff throughout the organization that influence their actions and behaviors" (Agency for Healthcare Research and Quality, AHRQ PSNet, 2014). A just culture is essential in healthcare incident reporting because it builds trust, promotes learning, and ensures fair accountability. When something goes wrong, the way organizations respond to staff directly affects whether people feel safe to report incidents. In a just culture, the focus is not on punishment, but on understanding what happened, minimizing harm, and learning from the event. Sidney Dekker's work highlights that accountability should be seen in two ways:

retributive, where rules are broken and consequences are given, and restorative, where the focus is on who was harmed, what their needs are, and how those needs can be addressed. Restorative approaches encourage open reporting, honest disclosure, and active involvement of staff in solutions. This perspective helps reduce fear of blame, supports staff who make errors, and creates an environment where incident reporting becomes a tool for safety improvement rather than a source of punishment. By applying just culture principles, organizations can strengthen reporting systems, increase trust, and turn incidents into opportunities for learning and safer care (Dekker, 2018). A study mentioned that almost all doctors and nurses (98.3%) knew of their hospital having an incident reporting system. However, nurses were far more familiar with how to use it compared to doctors. For example, 88% of nurses knew how to access a report versus only 43% of doctors, and nearly 90% of nurses had completed a report compared to about 64% of doctors. Nurses were also more likely to know what to do with a completed report (Evans et al., 2006). Findings from the National Reporting and Learning System in England, showed that hospitals where staff report more incidents have fewer legal claims. When more staff are available, reports of patient harm go down, but near-miss reports stay the same. Specialty-specific differences were observed, whereby some specialties reported a greater proportion of near misses, while doctors predominantly reported harm-related incidents. Surveys showed that staff report more when the workplace is open and they do not fear punishment (Howell et al., 2015).

In a study published by an inspector general of Department of Health and Human Sciences - USA (DHHS), every hospital in the study had an incident reporting system to record patient harm, and administrators said they relied heavily on these systems to guide safety improvements. However, the report found that staff failed to report 86% of harmful events, so the systems captured only about 14% of the actual problems. One main reason was that staff often did not realize certain issues counted as patient harm, or they simply chose not to report them. Nurses were the group most likely to file reports, usually after noticing problems during patient care, and some of these reports led to investigations or small policy changes. Still, hospitals admitted that many events were never shared with the staff responsible for safety, and overall, very few policy changes were made. Accreditors, who check hospital safety, said they focus more on how hospitals use information from events rather than how completely the events are tracked. They usually don’t review reporting systems closely unless a problem is already obvious (Levinson, 2012).

Research shows that mistakes or problems in hospitals, called adverse events (AEs), can cause injury, longer hospital stays, or even death. Hospital mistakes or problems, called adverse events, can cause harm, longer stays, or even death. This study looked at how often these happen in Canadian hospitals by reviewing patient records from 20 hospitals in 5 provinces. Out of nearly 3,750 patient records, about 1 in 13 patients (7.5%) experienced an adverse event. Around one-third of these events could have been prevented, and about one in five led to death. Older patients were more likely to be affected, but men and women had similar risk. These events also caused thousands of extra hospital days. Overall, this means that in Canada each year, about 185,000 hospital admissions involve a problem, and nearly 70,000 of these could have been avoided with better care (Baker et al., 2004). Research in both the United States and Australia has shown that a significant number of patients are harmed by problems related to their medical care, not by their actual illness. These problems, known as adverse events, include things like medication errors, surgical complications, or hospital-acquired infections. A famous study from Harvard found that about 3.7% of all admission in the hospitals led to an adverse event. This means that nearly 4 out of every 100 patients admitted to a hospital experienced some kind of unintended complication or injury caused by the care they received. These results stress the importance of importance of improving patient safety and preventing avoidable mistakes in hospitals (Brennan et al., 2004).

Reporting barriers refer to “perceived or actual obstacles that prevent healthcare workers from disclosing patient safety events through formal reporting systems, thereby limiting organizational learning and safety improvement” (Gong et al., 2017). In some industries like aviation, reporting mistakes has made safety much better. But in healthcare, incident reporting is still not working as well. For reporting to help, it must be easy to use, non-punitive, and focused on learning, not blaming. Right now, many staff are afraid of punishment, unsure what to report, or feel reporting does not bring change. A good system should look at both small hidden problems (latent errors) and bigger mistakes (active errors). Most importantly, staff need clear feedback on what was found and what actions were taken. Local and national systems should work together so lessons are shared widely. In the UK, anaesthesia reporting has started using this method to improve safety (Mahajan, 2010).

As the largest hospital workforce, nurses are key to keeping patients safe and improving care in complex healthcare environments. Since they spend the maximum time of their shifts with patients, their actions and observations strongly affect outcomes. One important part of patient

safety is disclosing errors or near misses. When staff report mistakes, it is not about blaming anyone, but about learning and preventing the same thing from happening again. This kind of reporting creates an atmosphere in the healthcare organization where staff come forward and are comfortable to stand up and share their concerns. Many hospitals now have patient safety event reporting systems in place. These systems make it easier to record, track, and study safety problems. They help leaders and staff find risks early and work on solutions. Without reporting, many problems could remain hidden and continue to harm patients. That is why error reporting is considered a backbone of patient safety programs. It encourages openness, learning, and improvement across the whole healthcare team (Kapil & Anoopjit, 2020). Incident reporting is a key part of keeping patients safe and improving the quality of healthcare. It helps hospitals identify problems, prevent errors, and improve patient outcomes. However, the effectiveness of these adverse events notification systems depends a lot on how staff perceive and feel about them. Organizational risk management policies play a major role in shaping these attitudes (Kumar & Bhalla, 2024).

The effectiveness of incident reporting systems depends heavily on staff willingness to report events accurately and promptly. Reporting allows organizations to gather data on the frequency and types of incidents, analyze root causes, and design targeted interventions. It is also crucial in meeting regulatory and accreditation requirements, as many healthcare organizations are mandated to maintain incident reporting systems to comply with standards such as those prescribed by the Joint Commission International (JCI, 2025). However, barriers such as fear of blame, lack of awareness, and organizational culture often prevent healthcare staff from engaging fully with these systems, thereby undermining their effectiveness (Firth-Cozens, 2001).

Incident Reporting Systems (IRS) are useful tools for improving patient safety, as they help organizations understand how patients may be harmed. However, they are not perfect and have many limitations. Because they are voluntary, they do not capture all errors, cannot measure overall safety or compare hospitals, and often produce too many reports without strong follow-up actions. They also require time and resources. Despite this, IRS still provide important value. They help identify local system problems, collect experiences from rare events, share lessons across organizations, and support a stronger safety culture. To make IRS more effective, reporting should be easier and more meaningful for staff. Success should be measured by system improvements, not just the number of reports. Hospitals should focus on

investigating important events thoroughly and involve different stakeholders to maximize learning and safety (Pham et al., 2013). Incident reporting systems are seen as critical tools for learning from mistakes in healthcare. But studies show that many incidents are not reported by staff (Pfeiffer et al., 2010).

Incident reporting behavior of health professionals is defined as "their action towards the error they committed to disclose or conceal to their colleague or concerned body" (Yalew and Yitayew, 2021). Even though patient safety has gained more attention in recent years, doctors are still not very involved in hospital safety activities. A survey of internal medicine doctors showed that while many had witnessed several adverse events or near misses, most left these reports unreported. The significant reasons for not reporting were lack of clarity on how and what to report, time concerns, and doubts about the importance of the event. Fear of blame or judgment was a less important barrier. Doctors who saw more barriers or more adverse events had a lower perception of hospital safety. However, more than half said they would be willing to actively take part in hospital safety efforts if asked (Schectman & Plews-Ogan, 2006).

Several studies have examined how incident reporting works in hospitals. Some compared it with chart reviews or direct observation, while others tested asking doctors directly for reports. Big databases like Joint Commission in the U.S. and Australian Incident Monitoring Study (AIMS) in Australia show that reporting captures some incidents, but not all. Joint Commission collected relatively few reports, mostly serious events, while AIMS collected many more, especially in anesthesia, and found both human and system failures. Still, most reports did not link clearly to patient harm. Hospital reporting systems often miss many incidents sometimes less than 10% are captured due to cultural and environmental barriers. Active solicitation, such as interviews or email reminders, can reveal additional events not found in routine systems. However, reporting usually drops when prompting stops. Overall, incident reporting helps identify problems, but alone it does not measure or prove positive changes or direction in patient safety (Wald & Shojania, 2001). Incident reporting systems are increasingly used to judge how well hospitals are performing in safety. However, using these reports mainly to rate or punish organizations can create problems. It can conflict with the main goal of reporting, which is to learn from mistakes and improve patient safety (Britain, 2015; Dodds & Kodate, 2012). Studies show that about one-tenth of hospital patients during their treatment or stay experience adverse events, which means they are injured because of medical care, sometimes leading to longer stays, disability, or even death. These events not only harm patients but also

increase healthcare costs. Many of these patient safety events are avoidable through improved and safe practices. By understanding how often and why they happen, hospitals can develop ways to improve care. There are different methods to track these events, but they don't always catch the same problems, and definitions can vary. For example, incident reporting systems capture only a small share or percentage of events found in detailed medical records documentation audits. Without reliable ways to measure adverse events, it's hard to track progress in patient safety. This review emphasizes the need for an organizational environment that learns from mistakes, explains how adverse events can be measured, and highlights why current monitoring methods fall short (Rafter et al., 2015). About 1 in 10 patients experience harmful events during their hospital stay. Many of these problems could actually be prevented. Since most are linked to surgery or medicines, focusing on safer operations and better medication practices could greatly reduce the risk and improve patient safety (Vries et al., 2008).

1.1.2 Global Challenges In Incident Reporting

Globally, incident reporting faces numerous challenges, many of which are rooted in human and organizational factors. Research indicates that underreporting of incidents is a pervasive issue in healthcare, with up to 86% of adverse events going unreported in some settings (Williams et al., 2015). This is often attributed to staff fears of punitive action, lack of time, and perceptions that reporting will not lead to meaningful change. For instance, healthcare professionals may be reluctant to report incidents because they're worried about damaging their professional reputation, administrative sanctions, or legal consequences (O'Connor et al., 2017). These fears are exacerbated in organizational cultures that prioritize accountability over learning, creating a "blame culture" where individuals are hesitant to admit errors (Dekker, 2012).

Another major barrier is the perception that incident reporting takes a long time and burdensome. Many reporting systems require detailed documentation, which can discourage staff from reporting incidents, specifically in high-stress environment departments such as department of emergency or intensive care units (Jones et al., 2018). Moreover, a lack of feedback from management regarding the outcomes of reported incidents further erodes staff confidence in the system. When staff perceive that their efforts to report incidents do not result in tangible improvements, they may become disengaged, perpetuating the cycle of underreporting (Howell et al., 2017).

These challenges are further aggravated by the lack of standardized definitions and protocols for incident reporting. Inconsistent terminology and varying interpretations of what constitutes an "incident" can lead to confusion among staff and hinder the reporting process. For example, near-misses, which are events that are intercepted before causing harm, are often overlooked in reporting systems despite their valuable insights into potential risks (Reason, 2000).

Researchers reviewed 450 patient, nursing, and medication records to check for problems caused by medical care. For patients who spent time in the hospital as an inpatient for more than 24 hours, about 8 in every 100 (7.9%) experienced an adverse event. The rates were different in each area: none in obstetrics, 7.2% in acute medicine, and as high as 13% in acute surgery. Nearly half of these problems (43%) could have been prevented, and more than half (59%) either made the hospital stay longer or caused the patient to come back after discharge. Nurses were good at correctly recognizing problems when they spotted them, but they missed many cases overall. Worryingly, the hospital's own voluntary reporting system captured only 1 in 10 i.e., only 10% of the actual events. The extra cost of these events in bed days was estimated at about £69,000 in this hospital alone, which could mean almost £300 million a year across Scotland. The study shows that reviewing patient records is still one of the best ways to detect adverse events, since hospital reporting systems miss most of them (Williams et al., 2008). Another study looked at how often patients experience adverse events (AEs) in hospitals and whether they can be prevented. AEs are harmful incidents, such as surgical errors, medication mistakes, or infections, that happen during hospital care. Researchers reviewed 25 studies from 27 countries. On average, about 1 in 10 hospital patients experienced an AE, and around half of these could have been prevented. In some cases, AEs were very serious, with up to 30% resulting in death. The most common problems were surgery-related issues, drug or fluid mistakes, and hospital-acquired infections. The number of AEs varied widely between countries and studies, partly due to differences in how the reviews were done. The study suggests that new automated systems using electronic health records could help hospitals detect AEs more accurately and prevent harm in the future (Schwendimann et al., 2018).

Hospitals can improve safety through better incident reporting, researchers combined knowledge from hospitals, safety experts, and industries with strong safety records to learn how improvement is achieved. They created a framework to assess how ready hospitals are to report and learn from incidents and how they can improve over time. The framework has 14 parts, with stages showing how hospitals can progress in each. Testing with hospital leaders

helped refine it. They found that safety methods from other industries can't be copied directly to hospitals. Instead, hospitals need step-by-step changes, including strong leadership focused on preventing harm, a culture where staff feel safe reporting errors, and tools to track and improve processes. Hospitals can make real progress in safety by improving how incidents are reported and acted upon. More research is needed to see how well this approach works in practice (Chassin & Loeb, 2013). Fifteen years ago, the Institute of Medicine (IOM) emphasized that healthcare pays more attention to incident reporting, similar to how aviation and other high-risk industries track mistakes. To see why progress has been slow, researchers interviewed 11 international patient safety experts with experience in U.S. healthcare. They identified five main challenges: poor handling of reports, low doctor engagement, lack of visible follow-up action, insufficient funding and support, and underuse of health information technology. Experts agree these issues prevent incident reporting from reaching its full potential. The future of reporting depends on focused reporting, better triaging, and thorough analysis. Doctors need to be actively involved, and hospitals must take visible, lasting action based on reports. Linking incident reports to electronic health records is also key. If healthcare is to learn from errors and near misses, incident reporting needs to be valued as highly as budgeting (Mitchell et al., 2016).

Even for people who care about patient safety, incident-reporting (IR) systems can be frustrating instead of helpful. These systems have well-known limits. They only catch a small portion of safety problems, and many reports focus on minor or routine events. Physicians use IR systems very little—one survey found that 86% of hospitals said doctors submitted "few or no" reports. This may be because doctors think reporting is mainly for nurses or pharmacists, or because filling out reports takes time and seems not very useful. Another big problem is that IR systems show numbers of incidents without showing how many patients were at risk, making it hard to understand true rates of problems. Even small changes in reporting can make problems look bigger or smaller than they really are. For example, one attending physician experienced frustration when nurses overlooked a patient issue, highlighting the challenges of relying on IR systems alone (Shojania, 2008).

Review of 850 adverse events (AEs) in hospitals, with more than a third (315) considered preventable. Many of these incidents were linked to surgery, medication use, or system failures, which means they could be reduced with better reporting and follow-up. About half of the preventable events occurred during hospital stays, showing how important it is to capture and

report them promptly. Older patients and certain medical conditions were at higher risk, and these incidents often led to longer hospital stays and greater harm. Since system errors were a major factor, accurate incident reporting can help hospitals identify patterns, learn from mistakes, and take corrective action. Strengthening reporting practices, along with staff education and feedback, is essential to improving patient safety and preventing similar events in the future (Davis et al., 2003).

Voluntary incident reporting mechanisms in healthcare are useful for learning about mistakes and near-miss events in hospitals. However, many of the reports are incomplete or incorrect, which makes it hard to study medical errors properly. To understand the quality of these reports, researchers looked at one year of reports from a university hospital. They found many records were inconsistent, and around 25% were marked as "miscellaneous" or "other." After reviewing them closely, researchers were able to replace these vague labels with more accurate descriptions. The study showed that the existing report categories usually work well, but sometimes staff choose the wrong ones because they don't have enough time or information. The researchers suggest creating a better system that focuses on users and uses clear medical terms (ontology-based system). This could help improve how complete and correct the reports are and make them easier to use across different hospitals or countries (Gong, 2011).

1.1.3 The Role of Organizational Culture

A study in Jordan which was conducted among 307 Jordanian nurses revealed a clear positive link exists between patient safety culture and how staff view incident reporting. Organizational learning showed the strongest safety culture dimension, while handoffs and transitions scored lowest. Enhancing safety culture and adopting non-punitive approaches can significantly improve reporting behaviours in healthcare settings (Alsobou et al., 2025). A nationwide cross section survey conducted on peri-operative nurses' behaviours and attitudes towards patient safety incident reporting, explored how a "just culture" – where nurses feel safe to report mistakes without fear of punishment – influences perioperative nurses in South Korea. It found that a just culture positively affected both nurses' attitudes and their actual reporting of patient safety incidents. The results show that when hospitals foster trust and support, nurses are more likely to speak up about safety issues. The study emphasizes that building and maintaining a just culture is key to improving patient safety in everyday nursing practice (Han et al., 2024).
Organizational culture exerts a significant impact on the ways in which staff think and act i.e., attitudes and behaviors toward incident reporting. Healthcare organizations that foster a culture

of safety and learning are more likely to encourage reporting and reduce the fear of blame among staff (Schein, 2010). A "just culture," which focuses on accountability without punishment, is widely recognized as a best practice in healthcare. Under this approach, staff are encouraged to report problems openly without being scared of punishment. The goal is to find and fix system issues, not to blame individuals (Marx, 2001).

Leadership also plays a crucial role in establishing and maintaining a culture that supports incident reporting. Managers and supervisors who demonstrate commitment to patient safety, provide constructive feedback, and protect reporters from negative consequences can significantly influence staff willingness to engage with reporting systems (Singer et al., 2009). On the other hand, a lack of visible leadership support can undermine reporting efforts, as staff may perceive that their apprehension and concerns are not given due importance by the organization. Another study found that underreporting of incidents is strongly linked to hospital culture. Many staff felt that reporting was mainly a nurse's duty, and there was little sense of shared responsibility across the team. To change this, organizations need to build a culture where all professionals see reporting as part of their role. Providing feedback, staff training, and simple reporting tools can help create this culture and strengthen patient safety (Varallo et al., 2018).

A Turkish study looked at how hospital staff in Turkey feel about patient safety and how it affects errors and reporting. Staff who felt their hospital had a strong safety culture were less likely to make or witness errors. They were also more likely to report incidents and give high safety ratings. Good teamwork, a positive safety climate, and better working conditions helped staff report more and improve safety. Surprisingly, staff who were more satisfied with their jobs reported fewer incidents. How staff viewed management also affected both errors and safety ratings. The study shows that every part of safety culture influences different results. Hospital managers should pay attention to all aspects of safety culture to reduce mistakes and encourage better reporting (Kaya et al., 2023). Many medical errors happen because hospitals have a "blame culture," where staff are made to face consequences for mistakes instead of learning from them. Experts say hospitals need a "just culture," where errors are used to improve safety rather than assign blame. Moving to this kind of culture is difficult, but understanding what causes blame or fairness in an organization is the first step. Khatri and team looked at hospital management research to see patterns in culture and ways to change it. Findings showed that blame culture is more common in hospitals with strict hierarchies and

rule-focused management. In contrast, a just culture happens when employees are involved in decisions and feel supported. Strong human resource management practices are key to helping hospitals shift from blame to learning. Encouraging staff participation and building trust can help create a safer, fairer work environment (Khatri et al., 2009).

A review explored how safety culture is shaped in hospitals compared to other industries such as construction and manufacturing. It showed that leadership, teamwork, workplace conditions, and staff characteristics are the main drivers of safety culture. However, hospitals have not fully studied wider cultural and socio-economic factors that also influence safety. Expanding research on these areas could help hospitals build a stronger and more effective safety culture (Wagner et al., 2020). A literature review study on how hospital culture affects reporting of patient safety incidents. Researchers searched databases like PubMed and ProQuest using terms such as “patient safety” and “incident report.” They looked at studies from the last ten years involving nurses or other healthcare staff and excluded reviews or tool development studies. Out of 77 articles, only 7 met the criteria and were analyzed. The review grouped findings into two main areas: organizational culture and healthcare staff. It showed that both a supportive hospital culture and motivated, aware staff are essential for effective incident reporting. Promoting these factors can improve patient safety and encourage more consistent reporting of mistakes (Astuti et al., 2021).

Hospitals are realizing that improving patient safety requires changing their overall culture. To support this, special tools are now used to assess safety culture, helping organizations understand staff attitudes, teamwork, and communication around safety. These assessments guide leaders in identifying weaknesses, planning improvements, and tracking progress. When used well, they become powerful tools for building a stronger safety culture and safer care (Nieva & Sorra, 2003). A study among nurses in Pakistan looked at how hospital culture affects error reporting. A survey of 309 nurses measured different parts of organizational culture and how they influence reporting mistakes. Nurses reported problems in three areas: error reporting culture, staffing and resources, and quality of care foundations. The study found that strong leadership, nurse involvement in hospital decisions, good teamwork, and adequate staffing all increased the likelihood of reporting errors. Married nurses and those on permanent contracts were also more likely to report mistakes. The findings suggest that improving hospital culture, addressing staff shortages, and developing better nursing care plans can encourage error reporting and improve patient safety (Jafree et al., 2015).

A survey of 6,800 staff in 68 Lebanese hospitals to assess culture of patient safety revealed the following strengths such as teamwork, leadership support, and continuous learning, while weaknesses were staffing shortages and fear of blame. Most staff had not filed any safety reports in the past year, yet many rated their hospitals highly for safety. The results show that building a strong culture of safety requires leadership commitment and system-level changes, especially in encouraging reporting without fear (El-Jardali et al., 2010).

1.1.4 Incident Reporting in the UAE

The healthcare system in the United Arab Emirates (UAE) has has seen major progress and transformation in recent years, driven by government initiatives to improve healthcare quality and align with international standards (Ministry of Health and Prevention, UAE, 2021). The UAE Vision 2030 outlines a commitment to achieving world-class healthcare, emphasizing patient safety and quality of care as key priorities (UAE Government, 2020). As part of these efforts, many hospitals in the UAE have adopted global accreditation standards such as those set by JCI and the International Organization for Standardization (ISO). These standards mandate the implementation of robust incident reporting systems and the promotion of a culture of safety (JCI, 2021).

Despite these advancements, incident reporting in the UAE faces unique challenges influenced by cultural., organizational., and regulatory factors. Studies suggest that healthcare staff in the UAE may experience similar barriers to reporting as their counterparts in other regions, including fear of blame, lack of time, and insufficient feedback (Alsafi et al., 2015). However, cultural considerations, such as hierarchical relationships and social norms, may further influence reporting behaviors. For instance, staff may hesitate to report incidents involving colleagues or superiors due to concerns about damaging relationships or facing professional repercussions (Elmontsri et al., 2017).

1.1.5 Fear of Blame and Punishment

One of the most pervasive barriers to incident reporting is the “fear of blame” and “punishment”. This issue is not unique to the UAE but is a global phenomenon that has been documented in various healthcare systems. A research in African healthcare organizations, ssynthesised evidence from 51 studies involving over 15,000 healthcare professionals in Africa and found that incident reporting about patient safety is influenced by aspects such as fear of

reprisal., staff attitudes, knowledge and skills, reporting system design, and managerial support. Addressing these barriers and facilitators is essential for improving reporting practices and enhancing patient safety systems (Fekadu et al. 2025). A study done in Saudi Arabia concluded that 55% of healthcare workers hesitated to report incidents due to fear of punitive action (Almutairi et al., 2018). Similarly, research in the UK highlighted that many nurses refrained from reporting errors because of concerns about professional consequences (Mwachofi et al., 2011).

In the UAE, fear of blame is further compounded by hierarchical organizational structures. Staff may be reluctant to report incidents involving higher-ranking personnel due to concerns about damaging relationships or facing retaliation. This hierarchical dynamic is particularly pronounced in multicultural environments, where expatriate workers may feel additional pressure to conform to organizational norms to protect their employment status (Elmontsri et al., 2017).

In family practice, many incident reports focused on blaming people. Almost half of the reports said a person was at fault. In about one-third of the cases, staff blamed another person, while only a few admitted their own mistake. Very few reports showed people taking personal responsibility. Blame was often linked to situations where a patient complaint was expected. This shows that staff may feel pressure to place blame rather than focus on learning from the incident (Cooper et al., 2017).

Patient safety is very important in healthcare, and understanding how staff feel about safety helps improve care. One study looked at healthcare workers in Saudi Arabia and how their perception of safety culture affected reporting of incidents. A survey of 402 staff showed that management support, good working conditions, and job satisfaction were key factors influencing reporting. Hospitals with a blame-free culture and clear reporting rules saw more incidents being reported. The findings suggest that improving safety culture can encourage staff to report mistakes, which helps prevent future errors. Overall, focusing on safety culture can make patient care safer and of higher quality (Alsahli et al., 2024). The main obstacles were lack of awareness and knowledge, fear of blame, disciplinary action, or litigation, worries about losing peer support, heavy workload, and system-related issues. Nurses suggested ways to overcome these barriers, such as anonymous reporting, timely feedback, a simpler reporting process, a blame-free culture, and proper training on what and how to report. Researchers

concluded that addressing these barriers should be a priority for managers and policymakers to strengthen patient safety in critical care (Salem & Abdelhamid, 2024).

1.1.6 Time Constraints and Workload

Another significant barrier to incident reporting is the perception that reporting is a process which not only takes long time but also a burdensome task. In fast-paced healthcare environments, where staff often operate under high workloads, reporting incidents may not be prioritized. Studies have shown that healthcare workers frequently cite time constraints as a reason for failing to report incidents (Jones et al., 2018). For example, a survey conducted of 800 healthcare professionals in the US, 45% reported that they avoided filing incident reports because of the time required to complete them (Waring et al., 2020). In the UAE, the high demand for healthcare services exacerbates these challenges. According to recent reports, the UAE experiences a high patient-to-provider ratio in many hospitals, leading to increased stress and limited time for non-clinical tasks such as incident reporting (Badr et al., 2019). Additionally, inadequate staffing levels in some facilities further strain healthcare workers' ability to balance their clinical responsibilities with administrative duties.

Healthcare workers in Saudi hospitals often do not report mistakes or near misses. One of the main reasons is heavy workload—staff are so busy that they do not have time to fill out reports. Other barriers include lack of knowledge, fear, weak support from managers, problems with the reporting system, and low motivation. The study suggests that making reporting easier, reducing workload, and having supportive managers can encourage staff to report incidents, which ultimately improves patient safety (Almansour, 2024).

Patient incident reporting is an important tool for improving healthcare safety, yet many health professionals do not report incidents because of time pressure. In a nationwide survey conducted in Finland in 2020, respondents noted that busy schedules and heavy workloads left little opportunity to complete reporting tasks. Even when incidents were recognized, the effort and time required to document them often prevented follow-through. This highlights how time constraints alone can act as a significant barrier to reporting, limiting the ability of healthcare systems to learn from errors and improve patient safety (Kuovo et al., 2020).

Time constraints is a significant barrier to improved and timely incident reporting in healthcare. In busy clinical settings, staff often face high workloads, leaving little time to complete detailed

reports. The effort required for documentation can discourage reporting, even when incidents are recognized. Studies show that simplifying reporting processes and using user-friendly electronic systems can reduce this burden and increase reporting rates (Van Geest & Cummins, 2003). Many professionals said the biggest challenge is the lack of time and heavy workload, which makes reporting feel like an extra task on top of their busy schedules. Limited staffing and competing responsibilities often push reporting to the side, even though they recognize it is important for patient safety. Some also felt that the process takes too long or is not easy to complete. Despite these barriers, staff agreed that education, teamwork, and open discussions can encourage better reporting (Crunden et al., 2022). In Malaysian primary care clinics, it was found that while many staff understand the importance of reporting, heavy workload and lack of time were the biggest barriers—especially for nurses, assistant medical officers, and pharmacists. Some doctors and assistants didn't report errors simply because they didn't realize one had occurred, while family medicine specialists were often unsure about the reporting process. At the same time, many staff said they would report if they believed it could improve practices, prevent patient harm, or if the system allowed anonymous reporting (Samsiah et al., 2020).

1.1.7 Lack of Feedback and Perceived Impact

Healthcare professionals in Saudi hospitals hesitate to report incidents and near misses. Using semi-structured interviews with 30 staff members—including doctors, nurses, pharmacists, and quality personnel—barriers were grouped into six themes: lack of knowledge, fear, weak leadership support, heavy workload, issues related to reporting system, and low motivation. The findings highlight the need for non-punitive reporting processes and careful selection of managers knowledgeable in patient safety. Addressing these barriers can help improve incident reporting and eventually enhance patient safety (Almansour, 2024).

The lack of feedback following the submission of an incident report is a critical factor that demotivates staff from engaging with reporting systems. When healthcare workers perceive that their reports do not result in meaningful action, they may become disillusioned and disengaged. Research conducted in Australian hospitals found that 67% of nurses believed that incident reporting did not lead to system-level changes, contributing to a decline in reporting rates (Evans et al., 2006). In the UAE, this issue is particularly relevant, as many healthcare institutions lack robust mechanisms for analyzing and acting upon incident reports (Alshammari et al., 2019). Without clear communication about how reported incidents are

addressed and resolved, staff may view the reporting process as futile. This perception undermines the overall effectiveness of incident reporting systems and hampers efforts to build a culture of safety.

Staff are more likely to report safety issues when they see that their reports actually lead to changes. If hospitals make it easy to report and then give clear feedback showing what was fixed or improved, staff feel their effort matters. Building this kind of feedback loop not only motivates workers to keep reporting but also helps create a safer environment for patients (Burbacher et al., 2011). Experience from healthcare and high-risk industries like aviation shows that giving staff clear feedback on what went wrong and how it was fixed makes them more likely to report problems in the future. When staff see that their reports lead to real changes, it raises awareness, prevents repeated mistakes, and builds a culture where learning is valued. This kind of feedback loop helps improve patient care and makes healthcare safer overall (Benn et al., 2009).

Hospitals in England and Wales in 2006 gave feedback when staff reported safety problems. They used surveys, case studies, staff interviews, and reviews of newsletters to understand what worked well and what did not. They also invited experts from healthcare and other high-risk industries like aviation and railways to share their ideas. Learnings were good feedback only works when there is strong leadership, proper systems, trained staff, and IT support and feedback on safety issues should reach all levels, including hospital boards, and focus on lessons learned instead of just numbers. Staff should get feedback in different ways IT, paper, and face-to-face with open discussions to improve accuracy and trust. Feedback should be part of daily work systems, regularly checked, and used to change practices and celebrate improvements (Wallace et al., 2009). A survey was sent to patient safety representatives in four hospitals in Denmark, the results showed that external reporters were rarely contacted, frontline staff were not much involved in learning, and few checked if changes actually worked. Often, incidents were blamed on personal factors. On the positive side, internal reporters got more feedback, management support was present, and many safety representatives felt confident in their roles (Moeller et al., 2016).

Interventions led to a clear rise in incident reporting in both inpatient wards and emergency departments. Doctors in emergency, nurses in wards, and anonymous reporters all reported more incidents than before. The types of incidents reported included documentation issues,

patient care problems, and aggression-related events. Most staff preferred using simple one-page forms instead of calling a hotline. Overall, the intervention encouraged a wider range of reports and improved doctors' reporting, though reporting levels still varied a lot between different hospital units (Evans et al., 2007).

Most trainees who had been involved in an adverse incident, nearly all reported it, but only about half received feedback on their reports. Senior trainees were more likely to get feedback than juniors, and not all had training on reporting during hospital induction. This shows that while awareness of reporting exists, the lack of consistent feedback limits learning from mistakes (Basu et al., 2009). Only a small number of incident reports received feedback, with serious cases and reports from doctors more likely to get a response than those from nurses or other staff. This lack of consistent feedback reduces opportunities for learning and improvement (Shanmuga Anandan et al., 2022).

Finnish study looked at over 16,000 incident reports collected between 2011 and 2015. Only about 3% of the reports included written recommendations on how to stop similar incidents from happening again. These recommendations were grouped into areas like staff training, patient care, guidelines, equipment/IT systems, and the work environment. The study found that managers receive a large number of reports but not all lead to clear follow-up actions. It suggested that hospitals need clear rules on what types of incidents should be reported, when managers must act, and how to ensure that recommendations are actually carried out (Luikka et al., 2019).

1.1.8 Organizational Culture and Leadership

A study of health practitioners of hospitals in Saudi Arabia found that medical errors are a real challenge in healthcare, and creating a culture which makes healthcare professionals feel safe to report them is so important. In this study, the researches explored how healthcare workers across Saudi hospitals report safety incidents and how things like hospital size and job role affect their reporting. Looking at data from over 145,000 staff in nearly 400 hospitals, we found that most people reported very few events, while managers and quality staff tended to speak up more. Surprisingly, larger hospitals reported even fewer incidents, showing there's still work to do in capturing safety issues. It really highlights the need to make reporting easier and more encouraged so that patient care can genuinely improve (Alkahf and Alonazi, 2024).

Organizational culture is a critical determinant of staff attitudes and behaviors toward incident reporting. A positive culture of safety, characterized by trust, transparency, and accountability, is essential for encouraging staff to report errors without fear of blame (Marx, 2001). However, many healthcare organizations struggle to establish such a culture, particularly in regions with diverse workforces like the UAE. Leadership plays a unique and critical role in molding the organizational culture. Research has shown that leaders who demonstrate a commitment to patient safety, provide constructive feedback, and protect reporters from negative consequences can significantly influence staff willingness to report incidents (Singer et al., 2009). Conversely, a lack of visible leadership support can erode trust and discourage reporting.

A study in Taiwan, looked at how willing nurses are to report mistakes or incidents that happen in hospitals. Reporting incidents is very important because it helps hospitals learn from adverse events / incidents and improve patient safety. The researchers wanted to see what factors make nurses more or less likely to report voluntarily. They surveyed over 1,300 nurses from six large teaching hospitals in Taiwan. The nurses answered questions about their workplace culture, their safety practices, and how they feel about their work. The study found that more than half of the nurses were not fully willing to report incidents on their own. The results showed that a strong reporting culture, good safety practices, and positive perceptions of work were all linked to nurses' willingness to report. Among these, safety practices played a key role, acting as a bridge between reporting culture and actual reporting behaviour. In simple terms, when hospitals encourage a culture of openness and support, and when nurses actively follow safety practices, they are more likely to report incidents without hesitation. The study concludes that improving reporting culture and strengthening safety practices can make nurses more confident and willing to report, which is vital for patient safety (Chiang et al., 2019).

Survey of 900 doctors and nurses of public and private hospitals in Kuwait showed strong teamwork within units, good learning and improvement practices, and management support for safety especially in private hospitals. Private hospitals scored better than public hospitals in most areas. Compared to a 2015 study, several areas of safety culture have improved, but staffing levels and the way errors are handled without blame are still weak. Recommendations included clear national guidelines, better staffing policies, protection for staff who report mistakes, and adding patient safety training in universities could further improve healthcare safety in Kuwait (Alsaleh et al., 2025).

In KwaZulu-Natal, South Africa, a study reviewed how staff in specialised care units use patient safety reporting and learning guidelines. The research found several obstacles, like complicated reporting systems, lack of support from management, limited training, and staff shortages, which made it hard to put the guidelines into practice. To fix this, the study suggests revising the guidelines with input from frontline staff, making reporting simpler and easier to use, improving implementation strategies, and offering regular training to help staff follow the guidelines and keep patients safer (Gqaleni and Mkhize, 2024).

In the UAE, where healthcare organizations often employ staff from different cultural backgrounds, leadership must also address cultural barriers to reporting. For example, expatriate workers may come from countries with less emphasis on transparency and accountability in healthcare, making it essential for leaders to provide targeted training and support (Bates et al., 2016). An empirical study looked at how hospital culture affects incident reporting in developing countries. Researchers used surveys and interviews to see how management support, communication, and overall safety culture influence reporting. Hospitals with strong safety cultures had higher reporting rates, showing that leadership and open communication are very important. Main obstacles included fear of punishment, lack of resources, and strict hierarchies. The study suggested that safety programs should be tailored to each organization to encourage honest reporting. Leadership involvement, better training, and strong reporting systems can help build a culture where staff feel safe to report mistakes and improve patient safety (Mamukuyomi et al., 2025).

Nurse managers' leadership style and the hospital's culture influence nurses report patient safety incidents. Nurses said their managers' supportive behaviours and a positive organisational culture made it easier and safer to report mistakes or near misses. The results showed that when leaders are fair, approachable, and encouraging, and when the overall culture is open and supportive rather than blaming, nurses are more willing to report incidents. Strong leadership and a healthy culture go hand in hand, and together they improve reporting practices. This helps hospitals learn from errors and provide safer care for patients (Al-Oweidat et al, 2023).

A patient safety incident reporting study in a private hospital in Jakarta, which treated over 50,000 outpatients and around 3,000 inpatients each year. There were 80 reported safety

incidents in 2020, which slightly decreased to 74 in 2021. Researchers studied 143 hospital staff to see what factors encourage reporting. They found that leadership style and the hospital's approach to blame strongly influenced reporting, especially when staff felt supported by the organization. A positive leadership style and moving from a blame culture to a fair, "just culture" helped staff report incidents more often. This also encouraged orderly work, following procedures, and overall improvement in patient safety. The study shows that supportive leadership and fair culture are key to increasing incident reporting in hospitals (Indriani et al., 2022).

Patient safety is a top priority in hospitals and clinics around the world. One way to improve safety is by encouraging staff to report mistakes and learn from them. This study in Italy reviewed research to see how safety culture affects incident reporting. The review found that hospitals and countries that focus on building a strong safety culture see more incidents reported over time. A good safety culture helps staff feel comfortable reporting mistakes without fear. An effective reporting system collects data, shares lessons, and gives feedback to healthcare workers. Overall, promoting safety culture and having a reliable reporting system are key steps to making patient care safer (Cerrone et al., 2023). Another study looked at how workplace culture affects medication safety for nurses, doctors, and pharmacists. Researchers reviewed 1,272 articles and analyzed 42 in detail. They found four main cultural factors that influence safety: "professional identity, fear of punishment or lawsuits, hierarchy, and pressure to follow existing practices". Sometimes, "culture" was mentioned in a vague way without clear meaning. The study shows that both organizational culture and the culture among healthcare professionals affect how safely medications are handled. Understanding these cultural factors can help hospitals create better policies and programs to improve medication safety (Machen et al., 2019). Strong quality management structures were linked to better teamwork, safety culture, and leadership in some areas like stroke and emergency care, but not in others such as heart attack and hip fracture care. Interestingly, stricter compliance checks sometimes had a negative effect on teamwork and safety culture in heart attack departments. Overall, the results suggest that while hospital-wide systems can improve patient safety culture, their impact differs across departments, and local factors also play an important role (Clay-Williams et al., 2020).

In South Korea, nurses were more likely to report actual adverse events than near misses, showing less proactive reporting behavior. A positive safety climate and strong knowledge

about patient safety directly encouraged reporting, while a “just culture” one that focuses on “learning from mistakes rather than blame” had an indirect effect by shaping attitudes toward reporting. Together, these factors explained nearly a quarter of why nurses chose to report or not. The results highlight that building trust, promoting a fair culture, and strengthening safety knowledge are key strategies to improve event reporting among military nurses (Yoon & Lee, 2020).

Patient safety is very important in hospitals, and nurses play a key role in preventing accidents. In Korea, comprehensive nursing service wards don’t have patient guardians, so nurses must be vigilant. A survey of 130 nurses regarding their critical thinking and the culture of their department affected reporting of safety incidents. Results showed that nurses with stronger critical thinking skills reported incidents more, especially when their department had a positive safety culture. A supportive culture where staff can freely share concerns and opinions helped increase reporting. The study suggests that hospitals should focus on building a good safety culture and training nurses to think critically to improve incident reporting and prevent future accidents (Yoo et al., 2017). Hospital leadership influences learning from patient safety events and one study found that when formal leaders such as hospital managers actively support patient safety, hospitals are more likely to learn from small errors, moderate mistakes, and near misses, and also to share lessons from major events. This effect was even stronger in small hospitals, where leaders are closer to staff and resources are more limited. The results show that strong leadership plays a key role in creating a culture of learning from errors, especially in smaller hospitals where safety programs can be harder to sustain (Ginsburg et al.,2010).

1.1.9 Cultural and Linguistic Barriers

The UAE’s healthcare workforce is highly multicultural., with professionals from over 200 nationalities working together in hospitals and clinics (Ministry of Health and Prevention, UAE, 2021). While this diversity brings unique strengths, it also introduces challenges related to communication, cultural norms, and expectations. Linguistic differences, for instance, can impede the clarity and accuracy of incident reports, particularly when staff members are required to document incidents in a language other than their native tongue (Elmontsri et al., 2017).

Cultural differences may also influence attitudes toward incident reporting. In some cultures, discussing errors openly is considered taboo, which can deter healthcare workers from

reporting incidents. Additionally, in hierarchical cultures, junior staff may feel uncomfortable raising concerns about errors involving senior colleagues (Waring et al., 2020). Addressing these cultural and linguistic barriers is critical to improving incident reporting practices in the UAE. One paper looked at why doctors may not report mistakes or adverse incidents in hospitals. Interview of 14 healthcare workers in the UAE regarding quality and safety revealed three main themes staff often felt left alone, struggled to connect with patients, and felt guilty, scared, or dissatisfied. Language barriers negatively impact service quality, patient safety, and staff well-being. The professionals stressed the urgent need for trained medical interpreters and for healthcare staff to be trained in working effectively with them (Al-Yateem et al., 2023).

Researchers interviewed 28 specialist doctors in the UK over two years. They found that fear of blame is a major barrier, but other cultural issues also play a role. Many doctors felt errors are inevitable in medical work, so reporting them seemed pointless. Some were also frustrated by bureaucracy and disliked extra paperwork. Additionally, doctors worried that managers or non-physicians could use incident reports to control medical practice. The study suggests that encouraging reporting requires understanding medical culture, not just addressing blame. Policies should respect professional control while promoting safety and transparency (Waring et al., 2005).

A study on why healthcare workers in public hospitals in East Java, Indonesia, may not report patient safety incidents. Over 1,100 staff were surveyed, and 27 managers were interviewed. The study found that many workers didn't know how or where to report incidents and often received little feedback. Cultural issues, like fear of conflict, also prevented reporting. Workers who had more training or experience in quality and safety were more likely to report incidents. Interviews confirmed that lack of knowledge and fear of problems were key barriers. Managers should improve communication, provide training, and create a supportive environment. Addressing both practical and cultural barriers can help increase incident reporting and improve patient safety (Dhamanti et al., 2020). Culturally, doctors are generally reluctant to report mistakes upward. They are more likely to report to a colleague, and reporting to a senior is most likely when a protocol is violated and a serious harm occurs. Instead of only reacting to adverse events, organizations could focus on identifying system weaknesses beforehand to prevent errors and improve learning (Lawton & Parker, 2002). A study tested the Safety Organizing Scale (SOS), a short 9-question tool that measures how staff behaviors support a culture of safety. The tool was shown to be reliable and different from related concepts like

trust or organizational commitment. Results showed that hospitals with higher SOS scores had fewer reported medication errors and patient falls in the following six months. This means the SOS can give practical insights into how safety culture is practiced day to day. It can also help nurses, managers, hospital leaders, and policymakers track and improve patient safety (Vogus & Sutcliffe, 2007).

Hospitals around the world are working to make care safer, but patients from minority cultural and language backgrounds are still at higher risk of preventable harm. One reason is that safety programs often overlook how culture and language affect care quality. When language and cultural differences between patients and healthcare providers are ignored, it can lead to mistakes that might not happen with mainstream patients. This problem acts like a hidden pathogen in the system, putting minority patients at risk. To protect all patients, hospitals need to recognize the link between culture, language, and safety. They should identify vulnerable groups and adapt safety systems to address communication and cultural challenges. By doing this, hospitals can provide safer, higher-quality care for everyone (Johnstone et al., 2006). Since the 1999 IOM report, hospitals have improved patient safety, but patients with limited English skills still face risks. This paper recommended two tools to protect these patients with limited English skills. The first is a hospital guide with recommendations to detect and prevent medical errors in patients with limited English. The second is a training module for staff to improve team communication and use interpreters effectively. Both tools were tested in multiple hospitals and found to be practical., useful, and easy for staff to learn from. These resources aim to reduce errors and improve safety for patients who face language barriers (Wasserman et al., 2014). Language barriers affect the reporting of patient safety incidents in hospitals. Patients who face language difficulties may be at higher risk for safety problems, but these risks can go unreported if communication is poor. Researchers found that communication-sensitive events, like medication mistakes or issues during childbirth, are most affected. When staff cannot effectively communicate with patients, incidents are less likely to be recognized or reported. Studies that looked beyond staff-reported events found more disparities, showing that language barriers can hide important safety problems. Overall, hospitals need strategies to overcome language barriers, such as interpreters and clear reporting tools, to ensure all safety incidents are properly reported and addressed (Schulson et al., 2025).

Interviews in a Canadian hospital revealed that shared cultural beliefs, such as fear of blame and the stigma of “tattling” on peers, discourage both self-reporting and reporting others. These

individual-focused attitudes reflect broader social norms in healthcare, even though the reporting system aims to promote learning and safety. In contrast, a culture that values learning and system improvement encourages reporting by shifting the focus from individuals to preventing future incidents. Addressing these deep-seated socio-cultural attitudes is key to creating more open and effective incident reporting practices (Hewitt et al., 2017).

Doctors and nurses differ in their attitudes toward incident reporting due to cultural differences. Nurses tend to report more often because their culture emphasizes clear protocols, guidance, and safety, while doctors often handle incidents "in-house" and rely less on formal directives. Common barriers for both groups include lack of time, complicated reporting processes, limited knowledge, cultural norms, poor feedback, concerns about risk, and the belief that reporting has little value. These differences and barriers affect how incidents are reported and highlight the need for tailored strategies to encourage reporting across professional groups (Kingston et al., 2004).

In the UK's NHS, the 'No Blame Culture' focuses on systems rather than individuals, but it often fails to address accountability. A group of researches proposes a 'responsibility culture,' where healthcare professionals are held responsible for foreseeable and avoidable errors without being blamed. Such a culture acknowledges the challenges of medical work, supports learning from mistakes, and encourages error reporting. By balancing accountability with a supportive environment, a responsibility culture can improve patient safety, validate professionals' sense of responsibility, and motivate them to report and learn from errors (Parker & Davies, 2020)

1.1.10 Current Practices and Gaps

In the UAE, hospitals utilize a variety of incident reporting systems, ranging from paper-based methods to electronic platforms such as Cerner and OVR (Occurrence Variance Reporting). While these systems provide a structured approach to capturing and analyzing incidents, their effectiveness is limited by staff engagement and organizational support. Survey data indicates that electronic reporting is the preferred method among UAE healthcare staff, with 348 respondents favoring electronic systems compared to 41 who preferred paper-based reporting. This preference underscores the importance of streamlining reporting processes to reduce the administrative burden on staff.

One of the critical gaps in the UAE healthcare system is the lack of comprehensive data on staff perceptions and attitudes toward incident reporting. While there are general guidelines and accreditation requirements, little is known about how these policies are perceived and implemented at the ground level. Understanding the factors that affect staff inclination and willingness to report incidents is essential for designing interventions that address barriers and promote a culture of safety (Alsafi et al., 2015).

The conceptual framework for incident reporting behavior provides a comprehensive understanding of the factors influencing staff engagement with reporting systems. By systematically addressing barriers, incident attributes, and institutional dynamics, healthcare organizations can promote reporting as a key mechanism for advancing patient safety and organizational learning. This framework not only guides the design and implementation of effective reporting systems but also emphasizes the significance of taking a comprehensive approach to fostering a culture of safety in healthcare settings.

Looking at patient records is the best way to find problems or mistakes that happen in hospitals, but it takes a lot of time and money. Hospitals also have other ways to report problems, like complaints from patients or families, legal claims, and reports from doctors or nurses. This study looked at over 5,300 patient records from 14 hospitals in the Netherlands to see if these reporting systems find the same problems. Trained nurses and doctors checked the records carefully, then looked in the complaint and report systems to see if the same problems were reported. Out of 498 problems found in the records, only 18 were also reported in one of these systems. Sometimes the same problem was reported more than once, but this happened very rarely. Doctors and nurses reported more problems that could have been prevented than patients did. Overall, the reporting systems miss most problems and cannot show the full picture of patient safety (Christiaans-Dingelhoff, et al., 2012).

A comparison of patient safety problems in hospitals i.e., incident reporting systems (IRSs), where staff report errors, and the Global Trigger Tool (GTT), which checks medical records for signs of harm, across 14 studies, GTT found thousands of adverse events, but IRSs captured only about 7% of them—sometimes none at all. This shows that IRSs miss most patient harms, especially common issues like diagnostic errors, and should not be used alone to measure hospital safety levels. Instead, IRSs are better suited to identify rare, serious, or new problems and help analyze why they happened. To truly improve safety, hospitals need to combine IRSs

with other tools like medical record reviews, so data leads to action and real improvements rather than just reporting (Hibbert et al., 2023). In a teaching hospital using adverse events reporting systems, while staff recognize the importance of reporting, many incidents go unreported because of limited knowledge, fear of punishment, and reliance on informal communication instead of official channels. Nurses and other staff often hesitated to file formal reports, which led to underreporting highlighting that stronger leadership support, better communication, and continuous education are needed to build confidence in reporting and to ensure that lessons from adverse events are used to improve patient safety (Siman et al., 2017)

1.2 Problem Statement

The healthcare sector, despite its ongoing advancements in technology, organizational strategies, and clinical protocols, continues to face persistent challenges in ensuring the safety of patients. Among these challenges, adverse events, preventable errors, and near misses remain a significant concern, often with dire consequences. Incident reporting has been globally recognized as a critical intervention for addressing these safety challenges. However, the effective implementation of incident reporting systems and the willingness of staff to engage with them are hampered by several barriers. These barriers, deeply embedded in organizational culture, individual perceptions, and systemic inefficiencies, constitute the central research problem of this study. Also, clinical staff such as nurses and physicians are the ones who commonly report incidents whereas the non-clinical staff do not usually report any incidents.

1.2.1 Global Extent of the Problem

Studies suggest that close to 86% of adverse events in hospitals globally, go unreported, the result of missed opportunities patient safety (Kaldjian et al., 2008). Despite efforts to implement structured reporting systems, only a fraction of incidents—typically those involving severe harm—are consistently documented (Pham et al., 2011). For instance, a study conducted across 26 hospitals in the United States found that only 1 in 7 harmful events were reported (Classen et al., 2011).

A major contributor to underreporting is the culture of blame that persists in many healthcare institutions. Staff often fear punitive actions, such as professional reprimand, reduced job security, or damaged reputations, which discourages them from acknowledging mistakes (Dekker, 2012). Additionally, the complexity and time-consuming nature of reporting

procedures deter healthcare workers from fully engaging with these systems (Evans et al., 2006). Furthermore, many institutions fail to provide adequate feedback to reporters, leaving staff disillusioned about the impact of their reports on organizational safety improvements (Howell et al., 2017). One study looked at whether patient incident reports were linked to malpractice claims in the Veterans Health Administration. Researchers compared more than 8,200 tort claims with over 32,000 incident reports from 1993–2000. They found that only about 4% of malpractice claims had a matching incident report, showing that many patient problems were never reported in the incident system. However, when a claim did have a related incident report, it was much more likely to result in a payment to the patient, and the payment was usually higher. Payments were especially likely in cases of medication errors, but much less likely in cases of suicide. Overall, the study shows that patient incidents are underreported, but when they are reported, hospitals are more likely to settle and provide compensation, especially for severe outcomes (Schmidek & Weeks, 2005). Most patients harmed in New Zealand hospitals do not file complaints. Out of 850 cases, only 3 patients (0.4%) complained, and even serious, preventable injuries led to complaints in only 4% of cases. Complaints were much more likely after severe injuries or death, but older patients, people of "pacific ethnicity", and those from low resource areas were far less likely to complain. This shows that while complaints can highlight serious problems, most injuries go unreported, and disadvantaged groups face barriers in using the complaints system (Bismark et al., 2006). A study in the American hospital systems looked at how often hospital workers report being hurt or threatened at work. In one U.S. hospital system, 2,010 employees were asked about violent incidents in the past year. Their answers were compared with official reports in the hospital's electronic system. The study found that most workers (88%) did not make formal reports, though many told their supervisors about it. Workers were more likely to report if they got hurt or had to miss work. Knowing this can help hospitals focus on keeping staff safer and preventing violence (Arnetz et al., 2015).

Hospitals in England utilize a national platform to report adverse events and incidents to o the National Reporting and Learning System, researchers examined trends over 18 months after each hospital joined the system. They found that reporting rates steadily increased over time. Hospitals that reported more incidents usually had a stronger culture of safety and better risk management practices. Higher-reporting hospitals also included more types of incidents, not just minor ones like slips or falls. Reporting rates did not seem to be affected by hospital size, patient age, length of stay, or death rates. The findings suggest that a positive safety culture

encourages staff to report incidents. Reporting is an important way for hospitals to learn from mistakes. Over time, using a national system can help hospitals track and improve patient safety. Encouraging reporting in a supportive environment benefits both staff and patients (Hutchinson et al., 2009).

Healthcare staff were given short stories about different situations, such as when someone followed the rules, broke the rules, or had to make up their own way because no rule existed. Each situation ended with either a good, poor, or bad outcome for the patient. A total of 315 clinical staff such as doctors, nurses, and midwives from three NHS hospitals took part, which was just over half of those invited. They were asked how likely they would be to report the incident to a senior staff member. The results showed that, overall, staff especially doctors were not very willing to report problems to their superiors. They were more likely to share concerns with colleagues when something went wrong. Reporting to a senior was most likely when a rule was broken, no matter the patient outcome. However, the strongest response was when a broken rule led to a bad result for the patient (Lawton & Parker, 2002).

Workplace violence (WPV) reporting through hospital's reporting system in an American hospital in 2013, where over 2,000 employees were surveyed about their experiences in the past year. The results showed that 88% of those who said they faced violence did not record it in the electronic system, though nearly half shared it informally, such as with their supervisors. Workers who were injured or missed work because of violence were more likely to report it formally. These findings highlight that underreporting is common, and knowing which groups of staff are less likely to report can help hospitals improve training, awareness, and prevention programs for workplace violence (Arnetz et al., 2015). Similarly, another review found that nurses often do not report workplace violence from patients or visitors. Reasons include fear of consequences, not knowing how to report, and seeing no action taken when reports are made. Problems with management and hospital systems, like weak support, missing policies, and complicated reporting processes, also add to underreporting. Clear training, better support, and simpler reporting systems are needed to help nurses report incidents (Spencer et al., 2023).

In 2015, only 20% of accidents were reported to the hospital of Thailand. In the same 3 months, 18% of accidents and 25.9% of near-miss events were not reported. While reporting has improved because people's attitudes toward it are changing, many healthcare workers feel unsure or afraid about reporting near-misses because of old habits and beliefs. This study shows

that reporting needs to improve so hospitals can build a stronger safety culture, encourage staff to report more, and make sure missed cases are found using better methods like mixed-model estimation (Sipasuwan et al., 2017).

Reporting medication errors (MEs) is an important duty for doctors, nurses, and pharmacists, but many of these errors are not reported in hospitals around the world. Studies from countries like the Japan, United States, Iran, Turkey, Malaysia, Saudi Arabia, Ethiopia and Korea show that underreporting is common, with some types of errors reported less than half the time. In Switzerland, researchers found a big difference between the number of errors staff reported on their own and the number found through direct observation. The same problem exists with adverse drug reactions (ADRs), even though most countries have reporting systems. A large review of 37 studies showed that more than 90% of ADRs go unreported, including serious or life-threatening ones, while a Swedish study showed 84% underreporting even in well-developed hospitals. This shows that underreporting is a worldwide issue and not just because of poor systems or lack of resources. It can delay the discovery of unsafe drugs, harm patients, and hide problems in the medication process. To fix this, healthcare systems need stronger efforts, like better training, cultural change, and finding the root causes of why staff do not report, so that reporting becomes more accurate and patient safety can improve (Al Meslamani, 2023). Medication errors in Iranian hospitals are often underreported, making it hard to understand their true scope. Main challenges include staff's lack of knowledge, fear of punishment, and complicated reporting processes, which lead many incidents to be ignored. Reporting is also inconsistent, and preventive measures are rarely evaluated. Improving reporting systems, addressing both individual and system-level barriers, and testing effective prevention strategies are needed to tackle underreporting and enhance patient safety (Mansouri et al., 2014). Surveys of registered nurses in Texas showed that most were willing to report errors of any severity. Factors such as job position, reasons for not reporting, and years since licensure influenced reporting of minor incidents, while nearly all nurses (99%) would report errors causing moderate to severe injury or death. The findings highlight that, although willingness is high for serious events, underreporting of minor errors may still occur due to individual and contextual factors (Throckmorton & Etchegaray 2007).

Dhamanti and team found that patient safety incidents in Indonesian public hospitals are often not reported, even though a reporting system has existed for over 15 years. Many staff do not report because they lack knowledge, see it as extra work, or fear consequences. Weak

leadership, little training, and no clear protection from punishment also add to the problem. These gaps show why underreporting is still common and why stronger support and safer systems are needed (Dhamanti et al., 2022). Indonesia's patient safety reporting system, in place since 2005, still sees low reporting rates. This study found that underreporting is driven by multiple challenges, including weak government leadership, poor hospital management, limited staff knowledge and training, cultural barriers like Javanese values, and flaws in the reporting system itself. Addressing these challenges requires stronger leadership, better organizational support, and making patient safety a clear priority at both hospital and national levels (Dhamanti, 2017).

Quite a few studies explored why hospital incident reporting is often low and how it can be improved. Interviews with 42 nurses from 42 hospitals revealed 96 barriers, including low reporting of near misses, poorly designed reporting systems, and weak safety leadership. To address these issues, 104 solutions were suggested, such as reward systems, multiple and anonymous reporting channels, and building a strong safety culture. The findings show that both individual and organizational factors affect reporting, and practical steps can help improve hospital incident reporting systems (Hwang et al., 2012). At Shifa International Hospitals, researches surveyed 217 doctors and nurses about incident reporting. Most consultants, registrars, medical officers, and nurses were willing to report incidents, but only 20% of house officers would do so. Many staff (69% of doctors and 67% of nurses) saw fear of administrative punishment as a barrier. Most preferred reporting to the head of their department. The study concluded that giving protection from sanctions, providing feedback, and showing that reports lead to system improvements can encourage more doctors and nurses to report incidents (Malik et al., 2022). Exploration of why nurses and resident physicians in South Korean tertiary hospitals often do not report patient safety incidents. Interviews with 16 staff revealed multiple barriers. Near-misses were underreported due to low-risk perception, frequent occurrence, lack of knowledge, fear of blame, and poor role models. Adverse events were also not reported because of pressure, guilt, non-mandatory reporting, and beliefs that reporting was not part of their job. Other barriers included limited training, unclear review processes, lack of confidentiality, no feedback, and fear of stigmatization. The study suggests that encouraging reporting at the institutional level and addressing these barriers can help improve the effectiveness of Korea's national patient safety reporting system (Lee et al., 2018). Factors which influence nurses' intentions to report incidents, using ideas from psychology and organizational behavior. Surveys from nursing staff at 40 hospitals showed that feeling

psychologically safe, having a positive attitude toward reporting, experiencing supportive social norms, and feeling in control all increased the intention to report. Nurses' perceptions of the costs and benefits of reporting affected their attitudes, while self-confidence influenced how much control they felt. Supportive norms and perceived benefits also strengthened the link between psychological safety and positive attitudes toward reporting (Lee et al., 2016).

A focus group study explored what makes staff report or not report incidents in mental health care. Focus groups with 52 staff from West London NHS Trust revealed five key themes. Three learning and improvement, time pressures, and fear were similar to barriers found in other healthcare settings. Two themes, how patient diagnosis affects incidents and fear of prosecution after an incident were specific to mental health care. The study concluded that while some challenges are common across healthcare, the higher rates of violence and aggression in mental health settings create unique difficulties for reporting incidents (Archer et al., 2020).

A literature review analyzed factors that help or hinder reporting of adverse events in healthcare. After screening 2,195 studies, 11 were included. Key factors that help reporting include institutional support, a strong safety culture, improved reporting systems, and incentives for voluntary and confidential reporting. Barriers include lack of resources, fear or shame, a punitive culture, little encouragement, and gaps in knowledge. Addressing these barriers through better training, resources, and promoting a safety culture can encourage reporting and provide more reliable data to improve patient care (Nazario et al., 2021). Review of 2,200 incident reports from two US hospitals to see what they reveal about factors contributing to patient safety incidents. Most reports (80%) mentioned at least one factor, including patient-related issues like illness or behavior, system problems such as equipment failures or poor coordination, and provider errors like slips or rule misapplications. However, many reports lacked enough detail, especially about provider factors, making it hard to fully understand the causes. The study shows that incident reports can highlight important risks, but adding more detailed information about contributing factors would make them even more valuable for improving patient safety (Nuckols et al., 2008).

In Ambulatory Care, most safety reports came from outpatient specialty care, while events in primary care, home, and community settings were rarely reported, despite being linked to higher harm. Medication errors were commonly reported, but serious issues like diagnostic errors and patient/caregiver challenges were likely underreported. Limited reporting systems,

inconsistent standards, and low engagement in certain settings make it hard to capture all preventable events. Improving reporting processes, focusing on high-risk areas, and involving patients could help address underreporting and enhance patient safety (Sharma et al., 2021).

1.2.2 Patient Safety and Incident Reporting in the UAE

There are limited number of studies published about incident reporting in the UAE. Government initiatives, such as the UAE Vision 2030, have emphasized the need for improving healthcare quality and aligning with global safety standards. Many hospitals in the UAE meet international standards by obtaining JCI accreditation and implementing IPSGs (International Patient Safety Goals), which mandate the establishment of incident reporting mechanisms (Ministry of Health and Prevention, UAE, 2021).

Despite these efforts, the UAE healthcare sector faces significant challenges in fully implementing incident reporting systems. Cultural factors, including hierarchical workplace dynamics and societal norms, may contribute to a reluctance to report errors, particularly those involving superiors or colleagues (Alshammari et al., 2019). Additionally, the diversity of the UAE workforce, which comprises healthcare professionals from various cultural and linguistic backgrounds, can introduce communication barriers that impact incident reporting practices (Bates et al., 2016).

Hospitals face a serious problem with adverse events, which can cause more deaths than car accidents, breast cancer, or AIDS. Understanding how the workplace contributes to these events is essential for improving patient safety. A study of adverse in a private healthcare organization in the UAE suggested that reporting and analyzing mistakes and near misses helps hospitals learn and prevent future errors. An electronic reporting system can make this process faster and more efficient compared to paper-based systems. It allows managers to track incidents in real time, respond quickly, and manage improvements locally. Studies show that using electronic systems can reduce the time to address problems by 25–50%. Overall, such systems improve patient safety by enabling faster responses, better tracking, and effective feedback to staff (Sathiyan, 2022).

Hospitals rely on teamwork among different healthcare professionals to provide safe patient care, and reporting medical errors is key to improving safety. However, many errors go unreported, which can harm patients and increase hospital stays. How nurses interact with their

leaders plays a big role in whether they report errors. This study used interviews and surveys to explore what influences nurses' intention to report errors. It found that nurses are more likely to report when they feel in control, supported by colleagues, and have a positive attitude. Leadership styles also matter: some styles, like transformational or laissez-faire, can weaken the impact of attitude on reporting. Overall, understanding both staff attitudes and leadership can help hospitals encourage more error reporting and improve patient safety (Taeidi et al., 2023).

The research problem dealt with in this study is a complex and multifaceted issue with important consequences for patient safety and organizational learning. "Fear of blame, time constraints, lack of feedback, and cultural barriers" are among the key factors that hinder staff from engaging with reporting systems. By examining these barriers and identifying strategies to address them, this research aims to contribute to the development of more effective incident reporting practices in the UAE. Ultimately, fostering a culture of safety and transparency will require a collaborative effort involving staff, leadership, and policymakers.

Healthcare staff in Abu Dhabi ICUs may hesitate to report mistakes or near misses, and a study was done to learn how to make it easier for them to speak up. A short survey was given to over 1,100 providers, with more than half responding. Most staff felt that hospital leadership and health regulators encouraged reporting and strongly influenced their decision to report errors. However, about 30% feared punishment, while 21% saw no barriers at all. Common challenges included a culture of blame and complicated reporting processes. Staff suggested creating open and supportive spaces to discuss mistakes, hiring patient safety advocates, and standardizing procedures to make reporting easier. Overall, the findings were similar to studies in the US, stressing the need for leaders to build a non-punitive culture that values reporting for patient safety (Edrees et al., 2017).

Patient safety practices in community pharmacies in Abu Dhabi reviewed through a survey of 318 pharmacists and found an overall positive response rate of about 75%. Teamwork scored the highest (92%), while staffing and staff allocation were the lowest (41%). Communication with colleagues and patients, as well as pharmacists' skills, also influenced safety practices. The study suggested that documenting mistakes, improving staff allocation, and reducing communication barriers with patients are important steps. Differences were also noted between

junior and senior pharmacists in how they rated overall safety and efforts to prevent mistakes (Alslubi & El-Dahiyat, 2019).

Accredited hospitals scored higher on patient experience compared to non-accredited hospitals in a cross sectional study conducted. Also, a four-year time series showed that accreditation improved hospital quality at first, but the benefits declined over the three-year cycle (Devkaran, 2014). Review of workplace accidents in the UAE using 1,700 accident reports from 2019–2020 and a survey of 290 people revealed that the most common accidents were falls, cuts from sharp objects, and burns. Even though the government has safety laws, some industries like healthcare and construction still face serious risks. The research found that better training for workers and stronger safety systems could help reduce these accidents, while the UAE has made big progress, there is still room to improve workplace safety (Al Zarooni et al., 2022). Using lean practices (ways to cut waste and work more efficiently) can make hospitals in the UAE more competitive. The researchers surveyed 270 people in a hospital in Sharjah and analyzed the data using statistical tools. The results showed that both process quality improvements and lean practices have a direct and positive impact on hospital performance. This means that when hospitals focus on better quality and efficiency, they are more likely to stand out and succeed (Al Kurdi et al., 2023).

Researchers interviewed 15 staff members from four public hospitals of UAE between June and December 2017. The discussions focused on how management oversees quality of care, staff experiences with accreditation, and the overall governance of hospital performance. From the interviews, four key themes emerged: hospital governance, accreditation, employee satisfaction, and quality management. Findings showed that strong hospital leadership and structured governance played a big role in achieving accreditation and improving care. Staff supported the development of hospital standards and wanted continued motivation and recognition for their efforts. Overall, the study highlighted that accreditation programs, backed by committed leadership and effective governance, can raise the quality of hospital services and lead to better health outcomes (Al Mohammed, 2020).

1.2.3 Need for a Proactive Approach

To address the challenges outlined above, healthcare organizations need to take a proactive approach to incident reporting. This includes implementing user-friendly reporting systems, providing ongoing training to staff, and fostering a culture of safety and learning. Research has

shown that simplified reporting processes, such as electronic systems with minimal documentation requirements, can significantly increase reporting rates (Howell et al., 2017). Additionally, regular training sessions that emphasize the importance of reporting and provide practical guidance on how to use reporting systems can enhance staff engagement (Jones et al., 2018).

Leadership is also a critical component of a proactive approach. Leaders must actively promote a culture of safety by promoting open communication, providing feedback on reported incidents, and demonstrating a commitment to addressing systemic issues. For example, a study conducted in Canada found that hospitals with strong leadership support had 30% higher reporting rates compared to those with weaker leadership engagement (Pham et al., 2011). Being proactive in maintaining communication networks can make them more reliable and reduce costs. Instead of only fixing problems after they happen, the proactive approach tries to spot issues early and prevent them. This is done by looking at the root cause of problems, predicting how software will perform, and planning improvements in advance. To make this work, organizations need to understand their current maintenance practices and use the right tools and methods (Strahonja & Saletovic, 2007). By spotting early warning signs, such as "trigger events" in newborn care, hospitals can take action before harm occurs. A strong incident reporting system focuses on learning from incidents, understanding system weaknesses rather than blaming individuals, and putting preventive measures in place. The real value of incident reporting is in creating a culture where staff see reporting as a proactive tool to improve patient safety and reduce risks for the future (Ahluwalia & Marriott, 2025). Doctors were more likely to report incidents when the process was built into their own medical teams rather than run mainly by managers. When physicians felt ownership and control of reporting, they trusted it more and believed it could lead to real improvements in patient care. A proactive approach that involves doctors directly, supports teamwork, and links reporting to visible service improvements can encourage stronger participation and better learning from incidents (Waring, 2024).

A proactive approach to incident reporting means finding and fixing problems before they cause harm. Instead of only reacting after something goes wrong, staff are encouraged to report small issues, near misses, or unsafe conditions early. This helps the organisation learn and make changes to prevent bigger incidents in the future. Tools like Incident Cause Analysis Method (ICAM) support this by looking at root causes and system gaps, not just individual

mistakes. By applying proactive reporting at all levels, safety improves, risks are reduced, and the workplace becomes more reliable for everyone (De Landre et al., 2006).

Predicting workplace incidents is very important for any industry. Most past studies have only used reactive data (information after an incident happens). This study goes further by also using proactive data (information about risks and unsafe conditions before an incident) together with reactive data to build better prediction models (Sarkar et al., 2017). Incident reporting works best when it is used not just to record mistakes, but to prevent future ones. Comparing two hospital divisions showed that proactive practices like reporting near misses, involving teams in investigations, and giving regular feedback led to stronger learning and safety improvements. Simply reacting after an error is not enough; organisations must look for early warning signs and learn from them. Training, open communication, and bottom-up involvement all help create a culture where staff feel safe to report and act before harm occurs. A proactive approach makes incident reporting a real tool for safety, not just paperwork (Hewitt et al., 2016). A retrospective record review, a method of looking back at patient records, to find problems that caused no direct harm but still showed risks. In 350 cases, the review found 118 no harm incidents, most of which were preventable especially those linked to medicines. In comparison, regular incident reporting systems detected only a small number of these issues. This shows that reviewing records proactively, alongside traditional reporting, can give hospitals a fuller picture of hidden risks and help prevent future harm (Schildmeijer et al., 2013).

Hospitals in Washington State can prevent problems before they happen by using proactive risk assessment tools. Instead of waiting for errors to occur, hospitals looked ahead to identify possible risks, such as handling patients with mental health issues, using patient-owned equipment after surgery, or transferring patients between hospitals. These reviews helped managers provide staff training, set safer rules about equipment, and create forms to improve communication during transfers. The key lesson is that looking for risks early and reporting them proactively helps hospitals stop harm before it reaches patients, making care safer overall (Coles et al.,2010).

1.3 Research Aim And Objectives

The aim of this study is to examine and explore how hospital staff in the UAE, both clinical (doctors, nurses, healthcare assistants, midwives, physiotherapists, dietitians, pharmacists, respiratory therapists, laboratory technologists, radiographers, psychologists etc) and non-clinical (administration staff, security, housekeeping, kitchen etc), (Ghorbanian, 2013; Austin et al., 2017; Flanagan et al., 2020) perceive and respond to incident reporting, and to understand the organizational factors that shape these behaviours. To achieve this, structured surveys were used to assess staff attitudes across a selection of accredited hospitals, offering insight into their views and experiences. The study also sought to identify the top five barriers that prevent staff from reporting incidents, drawing on both survey data and interviews. Beyond barriers, it examined how organizational culture and leadership influence whether and how often incidents are reported, using a blend of qualitative and quantitative methods. The research further investigated what motivates staff to report, including ethical responsibilities and organizational feedback, by comparing responses across departments. Ultimately, the goal is to provide healthcare administrators with a clear, evidence-based set of strategies to strengthen incident reporting systems and foster a more open and responsive safety culture.

1.4 Conceptual Framework

Incident reporting is a critical mechanism in healthcare that supports organizational learning, patient safety, and quality improvement. However, the decision of healthcare staff to engage with incident reporting systems is shaped by a complex interplay of factors, including incident characteristics, barriers to reporting, and institutional influences. These factors interplay to create a multifaceted framework that defines staff behaviors, organizational dynamics, and system-level outcomes. This conceptual framework provides a comprehensive understanding of how these elements influence incident reporting behavior, focusing on the relationships between independent, moderating, and dependent variables.

The independent variables in this framework include incident characteristics, such as the severity and type of incidents, barriers like fear of blame and workload, and motivators such as ethical responsibility and organizational incentives. These variables directly influence the decision-making processes of staff regarding incident reporting. For instance, the severity of an incident often determines its perceived importance and urgency, influencing whether it is reported. Research indicates that serious incidents with visible patient harm are more likely to

be reported compared to near-misses or minor errors, which are often overlooked despite their potential to highlight systemic vulnerabilities (Reason, 2000).

Barriers to notifying incidents, such as fear of punitive action, unclear definitions, and time constraints, are among the most significant factors affecting incident reporting behavior. A blame culture, characterized by punitive responses to errors, discourages healthcare workers from reporting incidents, as they fear repercussions that may affect their careers, reputations, or professional relationships. This is particularly relevant in hierarchical healthcare environments, where junior staff may hesitate to report incidents involving senior colleagues or superiors. In the UAE, the diverse cultural and professional backgrounds of healthcare workers further complicate these dynamics, as expatriate staff may face additional pressures to conform to organizational norms and avoid risks that could jeopardize their employment (Elmontsri et al., 2017).

Time constraints and administrative burdens are additional barriers that hinder effective reporting. In fast-paced healthcare environments, where staff often manage high workloads, the time required to complete detailed incident reports can discourage participation. Simplifying reporting systems and minimizing documentation requirements can alleviate this issue, as evidenced by studies demonstrating increased reporting rates when user-friendly electronic systems are implemented (Van Geest & Cummins, 2003). Similarly, unclear reporting protocols and inadequate training exacerbate confusion about what constitutes a reportable incident and how reports should be submitted, further reducing reporting engagement.

Motivators such as ethical responsibility, patient safety awareness, and organizational incentives play a crucial role in encouraging incident reporting. Many healthcare workers view reporting as a professional obligation, driven by their commitment to patient safety and quality care. Organizational efforts to reinforce these values, such as providing positive reinforcement for reporting and emphasizing the role of reporting in preventing future harm, can enhance engagement. For instance, when staff receive regular feedback on the outcomes of their reports and see tangible improvements resulting from their contributions, will perceive and consider that the reporting process as meaningful and worthwhile (Evans et al., 2006).

Moderating variables in the framework include organizational culture, leadership, and policies, which influence how independent variables affect incident reporting behavior. Organizational culture, particularly the presence of a "just culture," is critical in shaping staff attitudes and perceptions toward reporting. A just culture emphasizes learning from errors rather than assigning blame, encouraging open communication and fostering trust. In such environments, staff are more likely to report incidents without fear of retribution, as they understand that the focus is on identifying and addressing systemic issues rather than penalizing individuals (Marx, 2001). Conversely, in organizations where punitive responses to errors prevail, staff are less inclined to report, perpetuating underreporting and missed opportunities for improvement.

Leadership is another key moderating variable that significantly impacts incident reporting behavior. Leaders who prioritize patient safety, demonstrate a commitment to organizational learning, and actively “promote a culture of transparency and accountability” play a pivotal role in fostering reporting engagement. By providing constructive feedback, protecting reporters from negative consequences, and leading by example, managers and supervisors can build trust and encourage staff to participate in reporting systems. Research highlights the importance of visible leadership support, with studies showing higher reporting rates in organizations where leaders actively engage with safety initiatives (Singer et al., 2009).

Institutional policies also serve as important moderating variables, shaping the overall environment within which reporting systems operate. Policies that prioritize non-punitive approaches to incident reporting, such as those outlined in international accreditation standards like the Joint Commission International (JCI), reinforce the importance of transparency and learning. In the UAE, many healthcare organizations have adopted JCI standards, which require the deployment of incident reporting systems and the establishment of mechanisms to analyze and address reported incidents. These policies not only support staff participation but also ensure that reported incidents are systematically reviewed and lead to meaningful organizational changes (JCI, 2021).

The dependent variable in this conceptual framework is staff engagement with incident reporting systems, which is measured by the frequency, accuracy, and completeness of reports. Staff engagement is the ultimate outcome influenced by the interplay of independent and moderating variables. High levels of engagement indicate a well-functioning reporting system where staff feel that they are given power to report incidents without fear and believe that their

contributions lead to positive changes. Conversely, low levels of engagement reflect systemic issues such as blame culture, inadequate leadership support, and poorly designed reporting systems.

The relationships between these variables are dynamic and context-dependent, reflecting the unique characteristics of healthcare organizations and their environments. For example, in the UAE, cultural and linguistic diversity among healthcare workers introduces additional complexities to the reporting process. Language barriers, differences in cultural norms regarding accountability, and variations in professional training can affect how staff perceive and engage with incident reporting systems. Addressing these challenges requires tailored interventions that consider the specific needs and characteristics of the workforce. The conceptual framework also recognizes the role of feedback loops in shaping reporting behavior. When staff receive timely and constructive feedback on their reports, they are more likely to perceive the process as valuable and continue to engage with the system. Feedback not only reinforces positive behavior but also demonstrates the organization's commitment to addressing reported incidents and implementing corrective actions. Conversely, a lack of feedback can create a sense of futility, discouraging staff from participating and perpetuating underreporting (Evans et al., 2006).

To operationalize this framework, healthcare organizations must adopt a holistic approach that addresses each component of the system. This includes providing clear definitions and guidelines for incident reporting, deploying employee-friendly reporting systems, and offering regular training to ensure staff understand the significance of reporting and the way to use reporting tools effectively. Additionally, organizations must foster a culture of safety through leadership-driven initiatives that prioritize learning and transparency. Policies should emphasize non-punitive approaches to reporting and provide incentives for staff to engage with the system. The framework also highlights the need for continuous evaluation and improvement of reporting systems. By monitoring reporting rates, analyzing trends, and soliciting staff feedback, organizations can identify areas for improvement and implement targeted interventions. For example, if analysis reveals that certain types of incidents, such as near-misses, are consistently underreported, organizations can focus on educating staff about the importance of reporting these events and simplifying the reporting process. Similarly, if staff cite time constraints as a barrier, organizations can explore ways to streamline reporting systems and integrate them into existing workflows.

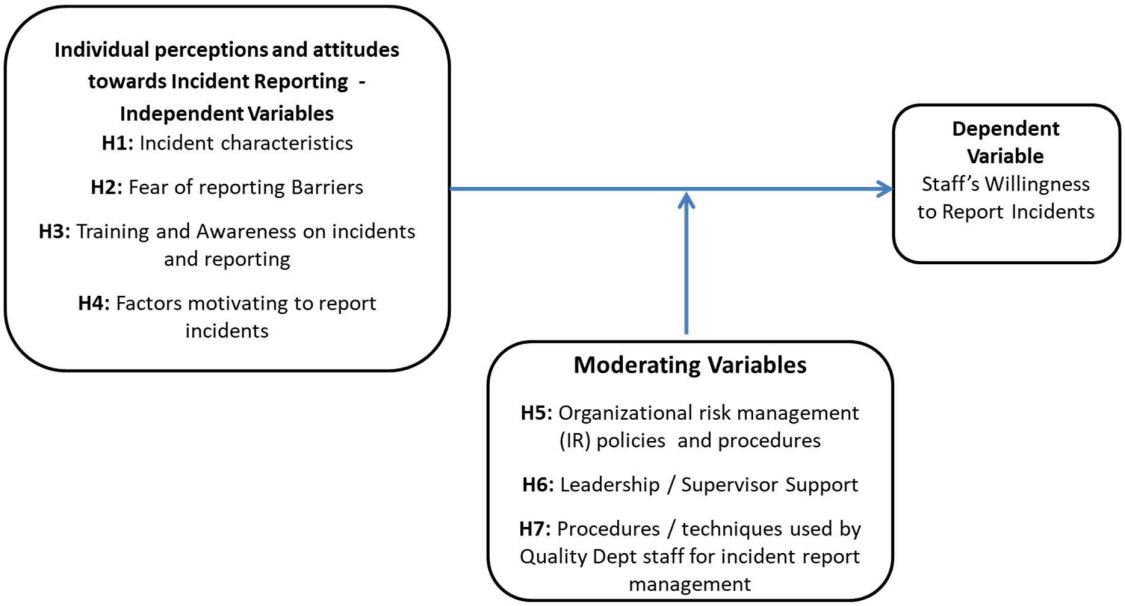


Figure 1 - Conceptual Framework

1.5 Scope of the Study

This study encompasses a thorough analysis of staff perceptions, attitudes, and behaviors toward incident reporting in healthcare institutions across the United Arab Emirates (UAE). The research explores the multifaceted factors that influence reporting practices, focusing on incident characteristics, barriers, and institutional factors. By including input from both clinical and non-clinical staff, the study highlights a complete picture of the challenges and opportunities for improving incident reporting systems within the unique cultural and organizational context of UAE hospitals.

The applications of this study extend across multiple domains within the healthcare sector. At the institutional level, the findings can directly inform hospital administrators and policymakers about the factors hindering or enabling effective incident reporting. For instance, by identifying barriers such as fear of blame, unclear protocols, or lack of feedback, healthcare organizations can implement targeted interventions to address these issues. This may include training programs, policy reforms, and the integration of user-friendly electronic reporting systems. Such measures can enhance reporting rates, improve the quality of data collected, and ultimately contribute to organizational learning and patient safety improvements.

On a broader scale, the study has implications for healthcare accreditation and compliance with international standards. Incident reporting is a key component of global safety benchmarks, such as the Joint Commission International (JCI) accreditation and the World Health Organization's patient safety goals. Achieving these standards not only elevates the reputation of healthcare institutions but also strengthens their operational frameworks. The UAE's commitment to aligning with these standards underscores the relevance of this research in supporting the nation's vision for world-class healthcare services.

Incident reporting remains a global challenge, with studies indicating that up to 86% of adverse events go unreported (Williams et al., 2015). This significant gap highlights the need for effective reporting systems to capture critical data on errors and near-misses. The findings of this study contribute to the global discourse by providing insights into how cultural diversity, hierarchical structures, and organizational policies influence reporting behaviors in a multicultural workforce like that of the UAE. These insights can be applied in similar healthcare systems that face comparable challenges, enabling cross-border knowledge sharing and innovation in patient safety practices. Out of more than 17,000 births in 2014, there were 524 serious adverse events. However, only about 9% were reported internally and 7% to central authorities. Even among the most serious cases, fewer than one in five were reported. Many reports also lacked proper analysis or suggestions for improvement (Johansen et al., 2021).

The implications of achieving the research objectives are profound, both in terms of immediate organizational outcomes and long-term sector-wide improvements. Addressing the identified barriers and strengthening a patient-safety oriented culture can lead to increased incident reporting rates, which in turn provide healthcare organizations with the data needed to identify trends, address systemic weaknesses, and prevent recurrence of errors. Improved reporting systems also build trust among staff, encouraging greater engagement and accountability. For patients, this translates to enhanced safety and higher-quality care, aligning with the ethical and professional responsibility of healthcare providers.

The study's focus on actionable recommendations ensures that its findings are not merely theoretical but can be directly implemented to achieve measurable improvements. By advancing the understanding of how incident reporting systems operate within the UAE, this research supports the development of resilient healthcare systems capable of responding effectively to risks, promoting transparency, and driving continuous improvement. Ultimately,

the study reinforces the critical role of incident reporting in creating safer, more effective healthcare environments, both in the UAE and beyond.

1.6 Justification of the Study

An estimated 10% of hospitalized patients experience harm during their care, with preventable medical errors ranked among the leading causes of death in some countries (Panagioti et al., 2019). Despite this, underreporting of incidents is a pervasive challenge, with studies suggesting that up to 86% of adverse events remain undocumented (Williams et al., 2015). This gap undermines actions to improve patient safety, emphasizing the urgent need to address barriers to reporting and improve the effectiveness of reporting systems. In this context, the current study is justified as it aims to explore and address these barriers within the unique cultural and organizational landscape of UAE hospitals.

The UAE has rapidly developed its healthcare sector emphasizing the importance of robust incident reporting systems as a component of quality improvement and risk management. However, the effectiveness of these systems depends not only on their design but also on staff engagement and organizational culture. The UAE's multicultural healthcare workforce introduces additional complexities, including linguistic and cultural barriers that influence reporting behaviors. Expatriate healthcare professionals, who constitute a significant portion of the workforce, may hesitate to write incidents due to hierarchical workplace dynamics, fear of repercussions, or unfamiliarity with reporting protocols. Addressing these challenges is essential to advancing the UAE's healthcare quality and patient safety goals. This aimed to fill the gap in knowledge by exploring "staff perceptions and attitudes toward incident reporting in UAE hospitals". By examining the barriers, motivators, and organizational factors that influence reporting behavior, the research seeks to provide actionable insights for strengthening incident reporting systems and fostering a positive reporting culture. The applications of this study extend beyond just actionable insights for healthcare administrators and policymakers to develop targeted interventions that address barriers to reporting. For example, identifying specific fears or misconceptions among staff can inform the design of training programs that emphasize the non-punitive nature of reporting systems. Similarly, understanding the impact of organizational culture and leadership on reporting behavior can guide strategies to enhance a culture of safety and transparency. By improving staff engagement with reporting systems, hospitals can enhance their ability to identify risks, implement corrective actions, and prevent future incidents. The study also has implications for the broader healthcare community by

contributing to the global discourse on incident reporting. Insights from this research can inform similar efforts in other regions with diverse healthcare workforces, particularly in settings where hierarchical structures or cultural norms pose challenges to transparency and accountability. Additionally, the study supports compliance with international accreditation standards, reinforcing the UAE's position as a leader in healthcare excellence. More research is needed to understand how near misses can be used to prevent serious errors. It also highlights the importance of studying the role of non-clinical staff in reporting safety issues, and whether practical trainings works better than classroom teaching. Finally, more work is needed to see if incident reporting systems are truly cost-effective and to compare results across different hospitals for wider learning (Ramirez et al., 2018).

Explore whether incident reporting systems actually help improve patient care by creating a strong feedback loop where reports lead to clear actions, changes are shared back with staff, and improvements are seen in patient outcomes (Brunsveld-Reinders et al., 2016). Fear of blame and poor reporting systems are major reasons why staff avoid reporting incidents. While better policies, supportive leadership, and user-friendly systems can help, there is no single perfect model that fits all hospitals. Future research should focus on understanding how supportive workplace culture and strong feedback loops improve reporting (Archer et al., 2017).

Healthcare staff in the Arab world want their hospitals to support them when they report mistakes. Research shows that when staff feel positive about safety, fewer errors happen. In hospitals of Palestine, units with a good safety culture had fewer patient problems. If staff are punished for reporting, the system won't work. Leaders need to treat mistakes as system issues, meet staff often, listen to feedback, and build trust. Good teamwork and communication between leaders and staff will lead to safer and better care for patients (Najjar et al., 2015). Almost all nurses know about incident reporting and agree it is important, however many still hesitate to report due to lack of time, fear of legal action, or concerns about their reputation. This highlights a gap between knowledge and practice. Future research should focus on finding practical ways to reduce these barriers, such as creating a non-punitive culture, streamlining reporting processes, and providing better support systems, so that nurses feel safe and encouraged to write & disclose incidents and improve patient safety (Anilkumar et al., 2025).

Achieving the research objectives has practical implications for patient safety and organizational efficiency. By identifying barriers and motivators to incident reporting, the study provides a roadmap for improving reporting rates and ensuring that incidents are documented accurately and promptly. This contributes to a learning healthcare system where errors are viewed as chances for improvement rather than blame. Moreover, fostering a positive reporting culture reduces the likelihood of repeat errors, enhancing patient outcomes and public trust in healthcare institutions. The findings of this study will not only support the UAE's efforts to enhance patient safety but also add to the global discourse on incident reporting in culturally diverse healthcare settings.

CHAPTER 2: LITERATURE REVIEW

Incident reporting has emerged as an indispensable element of healthcare systems worldwide, offering a structured mechanism to document, analyze, and learn from errors and adverse events. As healthcare organizations strive to improve patient safety and align with international standards, understanding the multifaceted dynamics of incident reporting becomes essential. A review into literature delving into the definitions, goals, and global trends of incident reporting, its connection to "patient safety and quality improvement", and critical themes such as barriers, motivators, leadership, and the impact of policies and training.

A focused literature review across leading healthcare management and science journals to understand incident reporting, patient-safety culture, organization factors, management support, risk management policies and procedures in the healthcare organizations was conducted. Articles were sourced from PubMed, Scopus, and Web of Science (2000 to2 025), screening English-language empirical and review studies from hospital settings. Key outlets included "BMJ Quality & Safety, International Journal for Quality in Health Care, Journal of Patient Safety, Health Services Research, BMC Health Services Research, Journal of Healthcare Management, Safety Science, PLOS ONE, and The Lancet". Findings were thematically synthesized around barriers (e.g., fear, time pressure), facilitators (e.g., leadership, non-punitive climate), and system/process enablers (e.g., easy-to-use reporting and feedback).

In addition, literature specific to the UAE, GCC, and Middle Eastern countries was reviewed to capture regional insights. Studies from Saudi Arabia, Kuwait, Palestine, and the UAE highlight unique cultural and organizational factors influencing reporting behavior, such as hierarchical structures, fear of litigation, and limited whistle-blower protection. Evidence suggests that leadership support, strong teamwork, and tailored national guidelines are especially critical in these contexts for promoting transparency and learning from adverse events. This regional perspective provides important context for understanding challenges and opportunities in building a stronger patient safety culture in Arab healthcare systems.

2.1 Definitions and Global Trends

Incident reporting is defined as "the systematic documentation of adverse events, near-misses, or errors that occur during healthcare delivery" (Mahajan, 2010). It is designed to provide data that can identify trends, assess risks, and inform the development of strategies to prevent

recurrence (Reason, 2000). Globally, incident reporting systems have become integral to healthcare management, with organizations such as the “World Health Organization (WHO)” emphasizing their role in fostering a culture of safety (WHO, 2020).

Incident reporting systems are rooted in safety science and organizational behavior theories. Reason’s "Swiss Cheese Model" (Reason, 2000) provides a framework for understanding how latent conditions and active failures contribute to incidents. This model highlights the importance of identifying and addressing system vulnerabilities to prevent adverse events. For instance, near-miss reporting provides insights into potential failures that, if unaddressed, could lead to harm. Near miss event can be defined as “an event or situation that did not produce patient injury, but only because of chance” (Agency for Healthcare Research and Quality, AHRQ PSNet, 2014). “The Theory of Planned Behavior” (Ajzen, 1991) is another critical framework, emphasizing how attitudes, subjective norms, and perceived behavioral control shape individuals' willingness to engage in reporting behaviors. For healthcare professionals, these theories underline the need for an environment that fosters positive attitudes, aligns with organizational norms, and reduces perceived barriers to reporting.

Adverse events happen when a patient is harmed by medical care, not by their own illness. Examples include medication mistakes, wrong diagnoses, falls, and infections. These can happen in any part of a hospital., even in the emergency room. Adverse events can be serious, causing longer hospital stays, lasting problems, or even death. Reporting and preventing these events are very important to keep patients safe. Hospitals work to reduce such incidents and improve the care they provide (Kakemam E et al., 2019).

One of the studies looked at how healthcare workers in the U.S. and U.K. feel about using incident reporting systems. Staff in both countries said the systems are often slow and don’t lead to real improvements, and hospital leaders rarely act on the reports. In the U.S., workers worried more about punishment or lawsuits, while in the U.K., they were more concerned about harming workplace culture. The study highlights that creating a supportive, blame-free environment is key to encouraging staff to report safety issues and improve patient care (Gampetro et al., 2024). A Sweden study compared serious hospital mistakes reported as sentinel events with malpractice claims between 1996 and 2003. Researchers looked at 113 patient cases where people had either died or suffered serious injuries. Out of these, there were 25 deaths, 37 patients left with more than 30% disability, and 51 with 16–30% disability. Only

about 1 in 5 cases (20%) were officially reported as sentinel events to the health authorities. Most of the problems were linked to orthopedic surgery, which also tended to cause the most severe harm. Interestingly, none of the cases involving infections were reported as sentinel events. Cases that were reported usually involved clear individual errors, while many other serious cases went unreported (Ohrn et al., 2011).

A study on reporting medication errors in paediatric patients, examined how medication errors are identified and reported in two Australian children's hospitals. It found that most errors, including serious ones that caused harm, were not disclosed or written through the official incident reporting system. Many errors went unnoticed by staff, which helped explain the low reporting rates. The results suggest that current reporting systems don't fully capture the extent of medication errors, and using automated, real-time monitoring could help improve medication safety for kids (Li et al., 2024).

In high-income countries, electronic incident reporting systems have replaced traditional paper-based methods, offering greater accessibility and efficiency (Mitchell et al., 2016). "Low- and middle-income countries (LMICs)", however, face challenges in implementing these systems due to resource constraints and limited awareness (Farley et al., 2012). Despite these advancements, underreporting remains a global issue, with estimates suggesting that only 10% to 20% of adverse events are documented (Makary & Daniel, 2016).

Studies in the United States and the United Kingdom reveal that open communication cultures foster higher reporting rates (Kohn, Corrigan, & Donaldson, 2000; Vincent et al., 2004). For example, the "National Reporting and Learning System" in the UK has seen significant success due to its emphasis on learning from errors rather than assigning blame. Conversely, punitive cultures and fear of repercussions hinder reporting in many developing nations (Pham et al., 2013). A systematic review showed that countries with well-established legal protections for whistleblowers tend to have higher reporting rates. The WHO's Patient Safety Alliance advocates for a non-punitive approach, encouraging healthcare workers to share information without fear (World Health Organization, 2009).

Healthcare errors and adverse events can be reported in many ways, but incident reporting is the most common method. While useful, it only reveals a small part of the safety problems in healthcare. Traditional manual reviews of incidents help us learn more, but they are too

expensive and time-consuming for daily use. Technology can improve incident reporting by making it faster and cheaper, but it still can't catch every error, especially when reports rely on coded data. Advanced tools that understand written medical notes may help improve incident reporting by finding more detailed information. Combining data from different sources can make reporting systems more accurate and reduce the need for manual work. To make reporting truly useful, we also need to understand why errors happen. This helps not just in detecting incidents but also in preventing them. Better-designed incident reporting systems, based on how people think and work, could contribute to real improvements in patient safety (Murff et al., 2003).

An ICU based study aimed to improve the reporting of patient safety events in three intensive care units (ICUs) by introducing a new, voluntary card-based reporting system. Conducted at a large urban teaching hospital., the study compared reporting rates before and after the system was implemented. Over 14 months, 714 events were reported using the card system, more than doubling the rate from the previous web-based method (from 20.4 to 41.7 reports per 1,000 patient days). Nurses submitted most reports (67.1%), but physicians showed the largest increase in participation, with a 43-fold rise. The study also found differences in how staff reported harm: nurses and other staff more often reported events that did not reach the patient, while physicians more often reported harmful events. Reporting rates also varied by ICU, with the medical ICU showing the highest rate. Overall, the card-based system led to a major increase in event reporting and highlighted how different roles and unit cultures affect what gets reported (Harris et al., 2007).

Medication safety monitoring research in a teaching hospital., with a focus on how pharmacy staff report incidents, involved 86 semi-structured interviews, including 36 with pharmacy staff, and analyzed the conversations using qualitative methods. They found that how an event is defined can lead to under-reporting, as some staff may not see certain situations as reportable. The way errors are classified also affects whether people feel motivated or discouraged to report them. Additionally, how events are categorized can either help or hinder the hospital's ability to analyze data and learn from mistakes. In some cases, the pharmacy’s internal learning processes reduced the number of errors reported to the broader hospital system. These findings show that definitions and classifications play a big role in how well safety reporting works, and improving these areas may lead to better learning and safer care (Tamuz et al., 2004).

2.2 Electronic incident Reporting Systems:

A US based study looked at how often and what types of incidents were reported in U.S. acute care hospitals using an "electronic error reporting system (e-ERS)". Between 2001 and 2003, 26 hospitals used a secure, web-based system for at least 3 months, with a total of 92,547 incident reports collected over more than 2.5 million patient-days. Reporting rates varied a lot—from 9 to 95 reports per 1,000 patient-days—showing that some hospitals reported much more than others. Nurses submitted almost half the reports, while doctors contributed fewer than 2%, raising concerns about underreporting by physicians. The most common reports were clinical (34%) and medication-related (33%) incidents. About half of the events actually reached patients, with most causing no harm, but some led to serious harm or even death. The study shows that e-ERS tools help staff report errors and near misses, but low and uneven reporting rates—especially among physicians—need further attention to improve safety reporting culture (Milch et al., 2006).

Electronic reporting systems are meant to help hospitals learn from errors and improve safety. However, their usefulness is often limited because the reports are of low quality. The researchers reviewed 48 e-reporting systems and analyzed 11 key features, including tools for easy use, confidentiality, hierarchical reporting, validation, and review notifications. They found that most current systems are still immature and not fully effective. The study suggests improvements in system design to make reporting easier, more reliable, and more useful for learning from mistakes. Better-designed e-reporting systems could help hospitals prevent errors and enhance patient safety (Gong et al., 2017).

Hospitals need to report when something goes wrong with a patient or when something almost goes wrong. In the past, this was done on paper, but now many hospitals are switching to electronic systems (E-IRS) to make reporting easier and faster. At the "Dental Hospital of Imam Abdulrahman Bin Faisal University in Saudi Arabia", they are starting to use an electronic system and wanted to see if staff are willing to use it and what affects their willingness. The study deployed a survey to collect information from staff. The results showed that most people were willing to use the new system. The two biggest reasons why people wanted to use it were: they found it useful and easy to use. These two factors explained most of the reasons behind their interest in the system. Demographic details like age or gender didn't affect willingness to use it—only job title made a difference. This means training and system design should focus on making the system as easy and helpful as possible for different job roles

(Al-Rayes et al., 2020). Medical errors are often under-reported, but learning from them is vital to improve patient care. The emergency department is a high-risk area, so a special web-based reporting system was designed to make it easier for staff to share incidents. This simple, secure, and non-punitive tool led to a big rise in reporting, from 81 cases in 2009 to 561 in 2012 (Okafor et al., 2015).

In healthcare, most reporting systems focus on problems, mistakes, or things that nearly went wrong. These reports are often done using electronic systems to make it easier and faster for staff to share important safety information. This research proposed a new idea, using these systems to report and learn from things that go *right*? Called "Learning from Excellence" (LfE). This approach showed that electronic reporting can also be used to share examples of excellent care. Instead of just reporting errors, staff can report when something was done really well examples include a clever solution, smooth teamwork, or safe and quick treatment. These success stories help others learn and improve, just like error reports do (Kelly et al., 2016). A study in New York, looked at how training staff to use an electronic reporting system (ERS) could improve patient safety in a hospital. A confidential system was introduced for staff, patients, and visitors to report safety problems or near misses. Education programs were run to raise awareness and encourage staff to use the system. In 2002, nearly 2,900 events were reported, with nurses submitting most reports and doctors very few. About one in five reports involved patient harm, while some described unsafe conditions or near misses. However, many reports had mistaken in coding or missed important details. Surveys showed that staff knowledge & awareness about patient safety and how to use the ERS improved after the training. The study concluded that while reporting increased, more effort is needed to involve doctors, improve accuracy of reports, and make event analysis more effective (Tuttle et al., 2004).

One study looked at how doctors, nurses, and hospital managers feel about using an electronic system (called Datix) to report problems or mistakes in patient care in four hospitals in Scotland. The survey showed that most staff like doctors, nurses, and managers agree that reporting incidents is important and feel responsible for doing it. They also felt that the Datix system was well-designed and collected the right kind of information. However, doctors had more negative views than nurses and managers. When researchers looked at actual data from the reporting system, they found that doctors reported far fewer incidents compared to nurses and managers. So, while the system is seen as useful, better feedback and support especially

for doctors may help increase its use (Walsh et al., 2010). At Osaka University Hospital., researchers looked at whether using two electronic systems a new online incident reporting system (OIRS) and an electronic patient record system (EPR) could help improve hospital care. At Osaka University Hospital., both systems are being put into place. Early results from the online incident reporting system showed that it helps prevent medical mistakes by allowing staff to easily report problems when they happen. This kind of reporting gives useful, real-life insights that can improve patient safety. While the EPR system, which is used to document patient information electronically, is useful, the idea is that if medical staff can directly enter data into a flexible, problem-focused system, it could build a strong database of clinical information. This would help hospitals better monitor and improve the quality of care over time (Takeda et al., 2003).

In Sweden, a review of 38 reports about problems with health information technology from a national Swedish reporting system. Each report described what went wrong and what actions the manufacturer took. The researchers used a classification system to learn the types of issues and the consequences. The problems were grouped into five types, such as machine-to-software or software-to-software issues. In most cases, the investigation found that the causes were different from what the reporter first thought. Only a few reports showed a change in the outcome after investigation. The study shows there is a gap between what staff report and what investigations reveal. Training staff, using clear terms, improving classification systems, doing short root-cause checks, and combining local and national reporting could help make reporting more accurate and useful (Rahman Jabin et al., 2023). Use of electronic application showed a small but significant increase in the frequency of reporting of incidents. Usability of the app was rated very high, suggesting that simplifying the reporting process and collecting basic data about the ED and staff can save time and make reporting easier. However, technology alone cannot fully address under-reporting; supportive policies and a positive reporting culture are also needed (Ramacciati et al., 2021).

Integration of incident reporting system with the electronic patient record was researched by a group of researches. Electronic patient record (EPR) systems that can do many things, like help with decisions, order tests, or give alerts. These systems could also help track diseases and improve patient safety. The researches added a voluntary incident reporting system into an EPR used in operating rooms so staff could report accidents or preventable problems. When checked how reliable the system was and whether staff liked it. Over four years (2002–2006), nearly

49,000 procedures were done, and clinicians filled out the reporting form for 85% of them. When comparing reports with patient charts, there was 80.6% agreement. Overall, adding the reporting system to the EPR worked well and was accepted by healthcare staff (Haller et al., 2007). Another study looked at incident reports related to interoperability i.e., EHRs not working well with other systems. Out of 1.7 million reports, 2625 were related to health IT, and 209 were specifically about EHR interoperability. Most problems happened with pharmacy systems (medications), followed by lab and radiology systems. The issues were usually caused by the EHR receiving information incorrectly rather than sending it. Most problems happened inside a single hospital or organization. Many incidents reached the patient, but only a few caused actual harm. Hence, when integrating other systems with EHRs/EPRs, due caution to be given for its functioning (Adams et al., 2017).

In Australian and New Zealand college of anaesthetists, trainees in anaesthesia were given handheld devices (PDAs) to report incidents and track their performance. About 1.5% of cases had incidents, most of which caused little or no harm, showing many near-misses. Almost all incidents are now reported using these devices. Serious incidents are automatically sent to hospital quality managers for review. The system is part of a protected quality program, keeping patient details confidential., thus created a transformation culture of quality improvement (Bolsin et al., 2004). Another study looked at the challenges of introducing new electronic incident reporting system, the electronic system has not shown much benefit for staff or patients, even though lots of data is being collected. Many reports are incomplete or not checked properly, and staff do not see it as a priority. Training and computer skills are limited, and staff rarely see changes in practice based on reported incidents. The system still has gaps, but managers, IT teams, and clinicians are working with the software company to improve it (Walsh & Antony, 2007).

One research used “Prevention appraisal failure” (PAF) as a means of linking incident reports with quality costs and to look at the problems and benefits of implementing reporting systems. The study used diaries, documents, and cross-checking methods to understand key success factors. It found that using quality costing with reporting systems can give doctors, managers, and leaders better insights into patient safety (Walsh & Antony, 2009). Another study looked at the effectiveness of a web-based incident reporting system in Taiwan. The research showed that web-based incident reporting system made it easier and safer for nurses to report patient safety incidents compared to paper forms. Nurses found it useful, but some felt it took too long

to complete. The system led to more reports overall, especially for lab errors, equipment problems, and minor incidents. To improve satisfaction and reporting rates, the study suggests simplifying the process and speeding up the system (Kuo et al., 2012).

2.3 Connection to Patient Safety and Quality Improvement

Incident reporting serves as a cornerstone of patient safety, enabling healthcare organizations to identify and address vulnerabilities within their systems (Vincent et al., 2000). By documenting adverse events, healthcare providers can analyze root causes and deploy targeted solutions to avoid similar occurrences in the future (Giles et al., 2014). This continuous cycle of reporting, learning, and improvement aligns with the principles of "high-reliability organizations", which prioritize safety as a core value (Weick & Sutcliffe, 2015).

The connection between incident reporting and quality improvement is further emphasized by accreditation standards. Organizations such as the "Joint Commission International (JCI)" mandate the establishment of robust reporting systems as part of their quality and safety frameworks (JCI, 2021). Moreover, research has demonstrated that hospitals with higher reporting rates tend to have better patient outcomes, suggesting that reporting is not only a reactive measure but also a proactive tool for enhancing care delivery (Pronovost et al., 2009).

The UAE's healthcare system is characterized by a diverse workforce, rapid modernization, and a mix of public and private sector services. Government initiatives such as the Abu Dhabi Healthcare Quality Index (JAWDA) and the Dubai Health Strategy 2021 emphasize patient safety and quality improvement (HAAD, 2017; DHA, 2018). These initiatives are supported by rigorous regulatory frameworks that mandate the implementation of IRMS in healthcare facilities. Despite these advances, studies indicate challenges such as underreporting of incidents, lack of staff training, and cultural barriers (Al-Mandhari et al., 2020). Moreover, the high proportion of expatriate healthcare workers in the UAE introduces additional complexities, including varying levels of familiarity with reporting systems and cultural differences in perceptions of accountability.

Successful reporting systems need to be simple, easy to use, and accessible, with features that ensure anonymity and protect confidentiality. Proper training for end-users before launching the system is crucial. Additionally, these systems work best when combined with a supportive, just culture, timely feedback, and active involvement of all staff, especially physicians and

junior staff. When these factors are in place, both satisfaction and reporting rates improve, ultimately enhancing patient safety (Abu Alrub et al., 2021). A study in in six hospitals in Ankara with staff answering questions about teamwork, management, job satisfaction, working conditions, and safety. The results showed that when staff felt a stronger safety culture, they reported more incidents, improving overall quality, witnessed fewer mistakes, and gave higher safety ratings. Good teamwork and safe working conditions reduced errors and improved reporting, while management support and safety climate boosted staff confidence in safety. Overall, the study shows that building a strong safety culture helps reduce mistakes, encourages staff to report problems, and enhance the quality of patient care (Kaya et al., 2023).

Users' perception about patient safety incident reporting software in two counties in Finland was studies using a survey which was sent to nurses, healthcare professionals, and employees, asking about satisfaction with the software. Out of 755 respondents, most were nurses, and 25 had never used the system, often because they felt reporting was unnecessary. Among users, less than half found the software quick and easy to navigate. The biggest complaints were about how reports were processed, and over a fifth did not trust the anonymity of reporting. Satisfaction was linked to training and how often the software was used. The study concluded that improving software features and considering user feedback is important to encourage reporting and enhance patient safety (Koskiniemi et al., 2024). One paper looked at how hospitals in New South Wales, Australia handle incident reporting and patient safety. The focus is on accountability and how it connects to reporting systems. Researchers observed hospital staff using ethnographic methods to see how incident management works in practice. They found that accountability can mean different things in different situations. The study identified three ways that reporting systems and policies interact with how staff understand and act on accountability. Rather than seeing incident reporting and local practices as opposing, the study shows they are closely linked. The findings suggest that efforts to improve safety must consider the local context of each hospital. Local practices and culture are important for making reporting systems useful. Understanding these "local ecologies" helps hospitals use incident reporting more effectively (Hor et al., 2010).

Clinical risk management is important and needed for improving patient outcomes, and incident reporting plays a key part in this process. This study analyzed three years of data from a reporting system, showing an increasing number of reports, mostly from medical staff. Many reports included suggestions for preventing the incidents or avoiding their repetition.

Categorizing these events helps create a cycle of learning, training, and better resource allocation. Encouraging staff to use the reporting system properly can turn it into a powerful tool for learning from errors, reducing legal risks, and strengthening the relationship between doctors and patients (Ferorelli et al., 2020).

An Iranian study looked at how confident nurses in Iran feel about their patient safety skills and how this relates to mistakes or accidents in hospitals. Researchers surveyed 511 nurses across eight teaching hospitals in Tehran using a special questionnaire. On average, nurses rated their safety skills at 3.34 out of 5, but 41.5% rated themselves below 3. Nurses felt strongest in safety "skills" but weakest in safety "knowledge." The results showed that nurses with better knowledge and attitudes about safety had fewer adverse events. Nurses with stronger skills and positive attitudes were also more likely to report errors when they happened. This means that improving nurses' safety knowledge, skills, and attitudes can reduce errors and increase reporting. Hospitals should provide training to build these competencies. By doing so, patient safety can improve, and errors can be addressed more openly. More studies are needed to confirm and expand these findings (Kakemam et al., 2024). One more study by Kakemam et al concluded that nurses with heightened systems thinking were more inclined to report errors and less likely to experience harmful events. In other words, nurses who better understood how the healthcare system works could both prevent mistakes and speak up when they happened. The study suggests that hospitals should train and strengthen nurses' systems thinking skills to improve patient safety and reduce harm (Kakemam et al., 2022). Experts say there are several reasons for this, such as poor handling of reports, lack of interest from doctors, not taking enough visible action after reports are made, limited funding and support, and not making good use of new health technologies. For incident reporting to really improve patient safety and the quality of care, reports need to be carefully reviewed, doctors must be more involved, and hospitals must take clear and lasting actions based on what is reported. Linking reports to electronic health records can also make them more useful. If healthcare wants to learn from mistakes and prevent harm, incident reporting must be taken as seriously as the overall health budget (Mitchell et al., 2016)

Critical incident monitoring in anaesthesia is an important way to improve quality and keep patients safe. It is now widely used in hospitals as a method to reduce serious problems and deaths during anaesthesia. Recent research shows that reporting serious mistakes, especially in anaesthesia, is becoming more accepted as a good way to improve patient safety. These reports

often show how human mistakes and problems in the system can lead to harm. Creating international databases has helped make reporting better and more useful. In the UK, their national system for reporting and learning from incidents has solved many problems with how reporting is done. However, watching staff directly while they work has been found to be even more accurate than waiting for them to report incidents themselves. Reporting serious incidents is still very helpful because it doesn't cost much and gives detailed information that can be used to fix problems and prevent them in the future. To improve safety even more, we should use new methods along with current ones and create a strong culture where safety is always a top priority (Choy, 2008). Patient safety incidents are common in busy emergency departments. Reviewing reported incidents helps identify the factors that cause errors and guide improvements. Encouraging staff to report and learn from these events is essential for safer care and better practices (Amaniyan et al., 2020).

Hospitals face increasing pressure to use smart technology to improve the quality and safety of care. The Institute of Medicine reported back in 2000 that up to “98,000 Americans die each year from preventable medical errors”, showing how important better information management is for hospitals. This research shared an experience of managing unsafe events by monitoring them within a hospital. Using ISO standards for quality processes, the project introduced a simple online form on the hospital’s intranet for doctors, nurses, and administrative staff to report problems or incidents. This system makes it easier to identify issues and supports better quality management across medical units (Le Duff et al., 2005).

Patient safety reporting systems (PSRSs) can be deployed to improve safety through risk analysis and standardized event taxonomies. Incident reports often face challenges such as selection bias and unclear denominators, making structured analysis essential. The authors propose a model with four steps: recognizing and reporting events, analyzing them, interpreting results, and implementing process changes. Education and learning are central to engaging staff and driving behavioral change. The study emphasizes that beyond collecting reports, effectively analyzing and acting on the information is crucial to reducing harm and improving patient safety (Pronovost et al., 2007). A review of 23 international case studies and interviewing 19 experts from healthcare and high-risk industries, the study found that actionable feedback that visibly improves systems encourages future reporting and learning. Key requirements for effective feedback included strong leadership, credible information, clear communication channels, rapid response, and feedback at all organizational levels. When

reporting, analysis, and timely corrective actions are linked in a closed safety-feedback loop, healthcare organizations can address system vulnerabilities, enhance patient safety, and better the overall quality of care (Benn et al., 2009).

Stavropoulou and team analysed 43 studies which showed little evidence that incident reporting systems outperform other reporting methods. Some improvements were seen in clinical processes (single-loop learning), but there was minimal impact on patient outcomes or on underlying organizational culture (double-loop learning). The findings suggest that incident reporting system could better enhance quality and patient safety if incident definitions were clear, systems were led by clinical teams, and reporting was integrated into broader safety programs rather than managed centrally (Stavropoulou et al., 2015).

The "Patient Safety and Quality Improvement (PSQI) Act of 2005" established a voluntary error reporting system aimed at improving patient safety in healthcare. The Act allows doctors and nurses to report mistakes or near misses without fear of punishment, which helps hospitals prevent injuries before they happen. This paper explains the key points of the PSQI law, shows how a national safety reporting system works, and clarifies what types of events should be reported. It also shares lessons from the aviation industry that can be applied in healthcare to make patient care safer and improve overall quality (Riley et al., 2008). In Japan, the Japan Council for Quality Health Care runs a national online reporting system where hospitals can share information about serious incidents and adverse events. Comparing hospitals in Japan and England use of reporting systems to learn from mistakes, it showed that while web-based reporting is a valuable tool, real progress also depends on human communication and strong national policies. The findings highlight that both technology and culture play an important role in improving patient safety (Kodate et al., 2021). One study developed a framework to better understand the ethical side of critical incident reporting in hospitals. Using a six-step approach that included case reviews, ethics consultations, literature, and expert input, four main categories of ethically relevant incidents were identified: patient communication, consent and autonomy, conflicts between medical and financial interests, and staff communication and workplace culture. Each category was linked with real examples and ethical principles. The framework shows how ethics can be built into risk and quality management, supporting hospital ethics consultations, strengthening ethical practices, and ultimately improving patient safety and staff satisfaction (Wehkamp et al., 2021).

Healthcare workers in two Tokyo hospitals one acute care and one mental health was asked about how they view reporting systems and learn from them. Interviews and meeting observations showed that staff recognize reporting as helpful, but meetings mostly focused on sharing practical updates rather than discussing deeper causes or solutions. Learning was shaped by factors like professional boundaries, emotional stress, leadership style, and balancing patient safety with patient centered care. The study highlights that hospitals are complex, and to improve safety, they must balance local expertise with broader system oversight while considering cultural and organizational dynamics (Kodate et al., 2022).

Incident reporting, long used in industries like aviation to improve safety, is now becoming more common in healthcare. In the UK, for example, it is part of hospital risk management and a requirement for the NHS. While reporting has led to safety improvements, experts argue that too much focus has been placed on counting incidents rather than analyzing them and learning from them. Most research has looked at barriers and staff attitudes toward reporting, but little is known about how electronic systems actually improve safety. This study explored electronic incident reporting in healthcare, identifying behaviors and perceptions that either encourage or discourage staff confidence in the systems. It also suggested strategies for healthcare leaders to strengthen the use of electronic reporting to better patient safety (Augustine, 2024).

A safety Guidebook was implemented across Veterans Affairs (VA) hospitals and Community Care services and how incident reporting contributed to improving quality and patient safety. Researchers interviewed 55 staff members from 18 VA facilities and regional safety officers to understand what helped or hindered using the Guidebook. They found that factors like planning, engaging staff, resources, communication, and organizational culture affected the effectiveness of incident reporting. The study showed that when staff are involved, roles are clear, and information is shared widely, incident reporting can better identify risks, support learning, and guide improvements in patient care. These lessons will help VA leaders strengthen safety practices and ensure that reporting leads to meaningful improvements in quality and patient safety (Sullivan et al., 2024).

A review of departmental incident learning system enhancing patient safety and quality of care in a hospital, starting in 2012, staff voluntarily reported near-miss or no-harm incidents using an electronic system, which were reviewed weekly and shared with the department. Over two years, nearly 1,900 incidents were reported, involving staff from multiple roles. Surveys

showed significant and lasting improvements in safety culture, including more open discussions about safety, greater confidence that reports were used to make improvements, and better evaluation of changes. Staff also felt less fear of embarrassment or blaming others concluding that a well-managed incident reporting system can uncover many safety issues and lead to meaningful improvements in patient safety culture and quality of care (Kusano et al., 2015).

2.4 Staff Perceptions, Attitudes and Organizational Influences

A study involving 325 nurses in Jordan showed that when nurse managers demonstrate supportive leadership and foster a positive organisational culture, nurses are more likely to report patient safety incidents. Leadership and culture were closely connected, and both had a clear impact on reporting practices. These findings highlight how creating a just, encouraging environment and nurturing strong leaders can empower nurses to actively participate in improving patient safety (Al-Oweidat et al., 2023). A study conducted on assessing organizational factors in incident management practices, looked at how different factors within hospitals affect the way incidents are managed. Using a data-driven model, it found that staff morale and engagement are especially important for handling incidents effectively. The findings show that hospital leaders need to pay attention to these organizational aspects when planning safety practices. By focusing on morale and engagement, managers can better use resources and improve overall quality and patient safety (Albreiki et al., 2024). Staff attitudes toward incident reporting are shaped by organizational culture, perceived utility of reporting systems, and individual accountability (Patterson et al., 2010). Positive attitudes are often associated with a culture that emphasizes learning and improvement rather than punishment. In the UAE, expatriate healthcare workers may face unique challenges, including language barriers, differing cultural expectations, and varying levels of training in IRMS (Al-Mutairi et al., 2019). Moreover, studies have found that familiarity with the objectives and outcomes of incident reporting systems significantly impacts attitudes. Healthcare workers who perceive IRMS as tools for personal accountability rather than organizational learning are less likely to engage in reporting behaviors.

At “6 October Health Insurance Hospital in Giza”, 250 staff nurses from different inpatient departments taken part in research. Two questionnaires were used to gather information: one about barriers to reporting and another about suggested solutions. The findings showed that the biggest barrier to reporting incidents was time constraints. Nurses felt they were often too busy

to complete reports. The lowest reported barrier was lack of education, meaning most nurses understood what reporting was about. On the solutions side, the strongest suggestion was to make reporting pathways more easily available. The weakest solution was valuing reporting, suggesting that some staff still feel reporting is not appreciated enough. The study concluded that time pressure is the main reason nurses avoid reporting, while easier access to reporting systems could encourage them to do so. It recommended that hospital leaders improve reporting systems, provide multiple reporting channels, ensure anonymity, introduce rewards for reporting, and work towards building a stronger culture of safety (Abeer et al., 2020).

A study was done about why medication errors happen and why nurses don't always report them in three hospitals in Taif, Saudi Arabia. Nurses said errors often occur because of unclear orders, heavy workloads, staff shortages, and mistakes in practice. Many nurses also avoid reporting errors because of "fear of punishment, lack of support, and not getting feedback". The study suggests that improving working conditions, offering proper training, and creating a supportive, non-punitive culture can help nurses report errors and make patient care safer (Alotabi, 2024).

Leadership has a crucial role in fostering a culture of safety. Transformational leadership styles, characterized by support, encouragement, and open communication, positively correlate with higher reporting rates (Weiner et al., 2008). Leaders who actively demonstrate a commitment to safety such as by participating in safety rounds and encouraging feedback—foster trust among staff. Studies in UAE hospitals demonstrate that visible commitment from senior management enhances staff trust in IRMS (Al-Hashimi et al., 2022). Conversely, a lack of leadership engagement often correlates with low reporting rates and high levels of staff frustration. One study looked at what hospital leaders think about state systems that require hospitals to report mistakes or safety problems. Leaders from hospitals in six different states were surveyed. Most said that if reports were made public, it would make staff less likely to report problems internally. Many also thought public reporting could lead to more lawsuits. They felt these systems might not improve, and could even harm, patient safety. The hospital's policy of making incident reporting mandatory and non-confidential actually discourages front-line clinicians from reporting. When staff fear blame or lack of confidentiality, they are less likely to share mistakes or near misses, even though this information is vital for improving safety (Weissman et al., 2005). A supportive, confidential., and learning-focused reporting system is more effective in encouraging honest reporting and strengthening patient safety. Most

leaders wanted the names of hospitals and staff involved to stay confidential. Leaders in states with public reporting were slightly more open to sharing the hospital's name. When asked about different scenarios, nearly all said they would report serious injuries to the state. But for smaller or moderate injuries, they would report less often, even if they told the patient or family. Overall, leaders were worried about the effects of mandatory reporting on safety and lawsuits. They preferred to inform patients directly rather than reporting minor incidents to the state (Weissman et al., 2005).

A survey of UAE nurses found that 67% feared disciplinary actions, while 45% reported limited understanding of reporting protocols (Thomas & Al-Mutairi, 2021). Hierarchical structures in hospitals often discourage junior staff from reporting incidents, particularly when errors involve senior team members (AbuAlRub et al., 2015). Additional barriers include language differences and the perception that writing incidents does not lead to meaningful improvement. Studies suggest that addressing these barriers requires both cultural shifts and structural reforms within healthcare organizations. In a survey of 120 physicians, 65% had not reported any adverse events or near misses in the past year, even though 60% had witnessed at least three such events. The main reasons for not reporting were uncertainty about what and how to report, the time it takes, doubts about the importance of the event, and low physician involvement in the system. Fear of blame or being judged was less of a concern. Doctors who saw more barriers or witnessed more events had a lower perception of hospital safety. Despite this, 58% said they would be willing to actively participate in hospital safety efforts if asked (Schectman & Plews-Ogan, 2006).

Organizational culture is a central determinant of staff engagement with incident reporting systems. Healthcare institutions that foster a "just culture," emphasizing learning over blame, are more likely to achieve high reporting rates (Dekker, 2012). Research conducted in Australia demonstrated that hospitals with strong safety cultures had incident reporting rates 40% higher than those with punitive cultures (Singer et al., 2009). In contrast, environments that prioritize blame or fail to protect reporters from negative consequences discourage staff from reporting incidents (Macrae, 2016). Studies in the Middle East have revealed that hierarchical dynamics exacerbate these challenges, particularly in cultures where deference to authority may deter junior staff from reporting incidents involving senior colleagues (Elmontsri et al., 2017). Leadership's role in setting the tone for a culture of safety is critical., as visible support from management can significantly influence staff attitudes toward reporting (Benn et al., 2015).

Non-punitive systems encourage reporting by removing fear of reprisal. Implementing anonymous reporting mechanisms has significantly increased incident reporting rates in UAE hospitals (Latif et al., 2021). These systems ensure that staff can report errors and near-misses without fear of consequences. Additionally, non-punitive policies reinforce the idea that reporting contributes to organizational learning rather than individual blame. A study examining the barriers to patient safety incident reporting by health professionals in Brazil. Analysis of eight hospital-based studies, mostly involving nurses in Southeast Brazil, showed widespread underreporting. Key reasons included fear of reporting, focus only on severe incidents, lack of knowledge about reporting, and reliance on registered nurses to report. The findings highlight weaknesses in the reporting process and emphasize the need to reduce these barriers and encourage staff participation to strengthen patient safety (Alves et al., 2019).

Education and training are critical to improving staff competency and confidence in using IRMS. Comprehensive training programs should focus on the objectives of incident reporting, the mechanisms for reporting, and the outcomes expected from these systems (Sujan et al., 2011). In the UAE, tailored workshops addressing cultural sensitivities and multilingual needs have shown promise (Elmontsri et al., 2018). For example, hospitals that implemented simulation-based training reported higher engagement levels among staff and increased reporting rates.

Timely feedback reinforces the value of reporting. Providing staff with updates on corrective actions taken as a result of their reports fosters a sense of contribution and accountability (Farag et al., 2020). In the UAE, hospitals that implemented real-time feedback systems saw improvements in staff satisfaction and reporting rates. Transparent communication about the outcomes of reporting also helps dispel perceptions that incidents are ignored or unresolved.

Advancements in health information systems offer opportunities to streamline IRMS. Automated reporting tools integrated with electronic health records (EHRs) reduce the administrative burden on staff (Carroll et al., 2017). These systems enable real-time data capture, analysis, and visualization, making it easier for organizations to identify trends and implement corrective actions. UAE hospitals adopting such technologies report improved data accuracy and usability (Al Ketbi et al., 2022). However, successful implementation requires robust training and ongoing support to ensure staff engagement.

Policy frameworks and accreditation standards play a pivotal role in shaping incident reporting practices. International bodies such as the "Joint Commission International (JCI)" and the "World Health Organization (WHO)" have established guidelines that emphasize the significance of non-punitive reporting cultures and robust reporting systems (JCI, 2021). Compliance with these standards is often a prerequisite for hospital accreditation, incentivizing organizations to prioritize incident reporting.

National policies also influence reporting behaviors. In Sweden, mandatory reporting requirements for adverse events have been linked to higher reporting rates and improved patient safety outcomes (Pukk-Härenstam et al., 2009). Similarly, the deployment of the National Reporting and Learning System in the UK has standardized reporting practices across healthcare institutions, facilitating data sharing and organizational learning (Macrae, 2016). Assaults against nurses in mental health care are common but often go unreported. This study looked at what influences nurses to report these incidents. Nurses used a complex decision-making process, considering safety culture, the reporting system, and the impact on patients. The design of the reporting system and organizational support affected their decisions. Understanding these factors can help improve reporting. Strategies should address all levels of the hospital system to make reporting easier and more effective (Gifford & Anderson, 2010).

Another study looked at how teamwork among nurses affects patient safety in eight Iranian teaching hospitals. A total of 327 nurses completed surveys about teamwork and patient safety incidents. On average, teamwork was rated fairly high (3.8 out of 5). Nearly half of the nurses (48%) said they had seen patient safety incidents in the past six months, while about 80% reported that they usually report such events. Strong teamwork was linked to fewer harmful events and better reporting. Nurses who were better at monitoring situations had fewer incidents, while those with strong mutual support and leadership were more likely to report problems. Overall, the study shows that teamwork plays an important role in preventing mistakes and encouraging nurses to report them. Training to improve teamwork could further strengthen patient safety (Kakemam et al., 2021).

2.5 Facilitators and Barriers to Incident Reporting

In Iran, a study explored how nurses feel about reporting their colleagues' medical errors. Most nurses reported negative experiences, including stress, moral distress, and even feeling unsafe, which can make them hesitant to report errors. Some positive experiences, like feeling valued

and motivated, encouraged reporting. The study signifies that improving patient safety culture and fostering good relationships among healthcare staff can help reduce negative experiences and make nurses more comfortable reporting errors, ultimately improving patient care (Namadi et al., 2024).

Various facilitators can encourage staff to engage with incident reporting systems despite challenges. Training programs have been identified as a key enabler, equipping staff with the knowledge and skills to recognize and report incidents (Kaldjian et al., 2008). In a study conducted in Finland, hospitals that implemented comprehensive training on incident reporting observed a 30% increase in reporting rates within one year (Pukk-Härenstam et al., 2009).

Leadership support also plays a critical role. Managers who actively promote safety initiatives, provide constructive feedback, and protect reporters from retaliation can foster a culture of trust and accountability (Singer et al., 2009). Additionally, integrating user-friendly technology into reporting systems can streamline the process and reduce the administrative burden on staff. For instance, the adoption of electronic reporting platforms has been associated with higher reporting rates in hospitals across Europe and North America (Van Geest & Cummins, 2003). A study looked at why hospital staff report or do not report medication errors. Researchers spoke with doctors, nurses, pharmacists, and risk managers at four hospitals in Nova Scotia, Canada. Interviews and focus groups were recorded, written down, and carefully analyzed. Five main barriers were found that stop staff from reporting errors: the effort required to report, concerns about professional reputation, lack of information, hospital policies, and fear. On the other hand, three main ways to encourage reporting were identified: make reporting easier, improve communication, and provide education. Staff said they would report errors more often if it was simpler, if they were trained properly, and if they got timely feedback. Understanding these barriers and solutions can help hospitals improve medication safety (Hartnell et al., 2012).

Staff were more inclined to report incidents that are obvious, commonly reported, and have immediate effects, such as patient falls or medication errors that need quick improvement actions and treatment to patients. On the other hand, near misses and incidents that develop slowly, like pressure ulcers or blood clots from lack of prophylaxis, were less likely to be reported. One of the biggest barriers for both doctors and nurses was the lack of feedback after submitting reports about 58% of doctors and 62% of nurses agreed this discouraged them from reporting. This shows that while awareness of reporting systems is high, effective feedback and

support are critical to improving their use. Barriers to incident reporting are multifaceted, encompassing individual., organizational., and systemic factors. Fear of blame and punitive action is one of the most frequently cited deterrents (Evans et al., 2006). In a UK-based study, over 60% of healthcare workers reported reluctance to report incidents due to concerns about professional repercussions (Lawton et al., 2012). These fears are often rooted in organizational cultures that fail to distinguish between accountability and blame (Marx, 2001).

Many studies have identified problems with incident reporting at organizations which were low reporting rates, especially for near misses, poorly designed reporting systems, and weak leadership on patient safety. Other barriers included "fear of blame, lack of feedback, and complicated reporting procedures". These obstacles prevent hospitals from learning from mistakes and improving patient safety. Addressing these barriers is essential for better incident reporting (Hwang et al., 2012). A study among anaesthesiologists, identified fear of blame, legal consequences, and lack of support were the main obstacles to reporting. The study also suggested that feedback, senior role models, and legal protections could help overcome these barriers (Heard et al., 2012). Analysis of 28 studies worldwide examined healthcare workers' attitudes toward medical error reporting and the barriers they face. It found that fear of personal or legal consequences was the most common barrier. Staff suggested solutions such as anonymous reporting, changing the blame-focused culture, and encouraging timely reporting. The review highlights key obstacles and practical strategies to improve reporting, offering guidance for healthcare providers, administrators, and quality management teams to strengthen patient safety (Unal & Seren, 2016).

A qualitative study to understand nurses' experiences and opinions about incident reporting in healthcare. A broad definition of incidents was used to capture a wide range of views. Interviews showed that nurses face several barriers that prevent them from reporting incidents. These barriers fall into two main groups: organizational and individual. Organizational barriers included lack of support and a weak safety culture, unclear outcomes from reporting, and unclear routines for how to report. Individual barriers included fear of being blamed or criticized. Overall, the study highlights that both the workplace environment and personal concerns influence whether nurses report incidents, suggesting that improvements are needed at both levels to encourage reporting (Prang & Jelsness-Jorgensen, 2014).

Time constraints also play a significant role, particularly in stressful working environments (departments) such as emergency departments and intensive care units. In the United States of America, one research found that 45% of healthcare professionals avoided incident reporting due to the perceived burden of completing detailed documentation (Jones et al., 2018). Similarly, research in Japan revealed that nurses were less likely to report incidents during shifts with high patient loads, underscoring the impact of workload on reporting behaviors (Takahashi et al., 2019).

A lack of feedback further compounds these issues. When staff perceive that their reports do not lead to meaningful change, they may become disengaged from the reporting process (Howell et al., 2017). In a Canadian study, healthcare workers cited the absence of follow-up communication as a primary reason for their disillusionment with incident reporting systems (Kirk et al., 2007). Patient safety can be greatly improved when hospitals have an effective incident reporting system. Such systems allow nurses to share what went wrong without fear of punishment. When nurses feel safe and supported to report mistakes, they are more open and honest. This creates an environment where problems can be identified quickly. Instead of blaming, the focus shifts to understanding why the incident happened. Through this process, nurses can learn more about the causes behind errors. Learning from mistakes helps them build confidence and knowledge. It also gives the hospital valuable information to prevent similar issues in the future. Over time, this leads to safer care for patients. A non-punitive culture of reporting is therefore essential for continuous improvement in healthcare (Tatum & Kumar, 2021).

Educating and training healthcare professionals about the importance of adverse event reporting (AER) can greatly improve reporting rates. For example, one educational program focused on medication errors increased reporting by healthcare staff from 10.7% to 54.9%. Emergency departments (EDs) face special challenges, including high workloads, overcrowding, and chaotic conditions. In such environments, staff often focus on keeping patients alive rather than on reporting safety issues. Because of this, interventions to improve reporting in EDs are less common than in other hospital settings. Although general educational programs and interventions have helped increase reporting and identify potential safety problems, more attention is needed in emergency care. This study aims to encourage interest in developing interventions for EDs. By improving AER in these high-pressure environments,

hospitals can enhance learning, prevent future errors, and ultimately better patient safety (Poke et al., 2019).

A study surveyed 2,185 healthcare practitioners using an online, anonymous questionnaire to evaluate an incident reporting system. The survey looked at training participation, satisfaction with training, reporting behavior, attitudes toward the system, and workplace safety culture. Most respondents had completed system training and rated it positively. Many had reported incidents and maintained consistent reporting levels since the system was introduced. Most staff had favorable views on using the system and its security, although opinions were mixed regarding workplace safety culture and the system's overall value. Some problems were identified, including poor quality of reports, insufficient feedback, and limited resources to analyze incident data. Differences were seen between professional groups: nurses were most likely to complete training, report incidents, and hold positive attitudes, doctors were least likely, and allied health staff fell in between (Braithwaite et al., 2008).

One review looked at why nurses sometimes don't report medication errors. Researchers screened over 4,000 studies and included 38 in their analysis. They found that barriers exist both at the organizational level like hospital culture, reporting systems, and management behavior and at the personal level, such as fear, accountability concerns, and nurse characteristics. To improve reporting, hospitals need a culture that is non-blaming, non-punitive, and free of fear. Reporting systems should be anonymous, simple, effective, and efficient. Supportive management that gives open feedback is also important. Nurses need education and skills to handle errors safely. The review also found little research on reporting near misses and low awareness of reporting. More research and better training are needed to overcome these barriers (Vrbnjak et al., 2016).

Medical errors are a problem in healthcare, but reporting them can improve patient safety. One study looked at why hospital staff don't always report errors, from their own perspective. 300 staff members from nursing, midwifery, paramedical., and medical groups at educational hospitals in Jahrom, Iran, participated. A 31-item questionnaire about factors related to errors, managers, medical teams, and patients, staff felt that the most significant reasons for not reporting errors were the errors themselves and managers' reactions. Serious or urgent errors and managers focusing on blaming individuals rather than system issues were key concerns. Staff also feared legal action from patients or families, and patients often didn't know an error

had occurred. The study concluded that educating medical teams to recognize errors and training managers to respond appropriately are essential. Addressing these factors can help improve reporting and patient safety (Jahromi et al., 2014).

At Kigali University Teaching Hospital identified that “fear of looking incompetent” as one of the main barriers to reports incidents among nursing staff. The most common incidents were patient falls and medication errors. Nurses reported incidents to prevent repeats and to help the hospital learn from mistakes. Nurses with more knowledge were more inclined to report incidents. Training and a supportive culture can help increase reporting and improve patient safety (Uwimana, 2017). Several factors help staff report incidents, including access to effective tools, clear tasks, supportive teamwork, and safe work environments. These facilitators enable staff to respond to events, anticipate potential problems, monitor ongoing care, and learn from past incidents. Reports also reveal safety practices that traditional methods like root cause analysis might miss. By strengthening these facilitators, hospitals can encourage more reporting, improve learning from incidents, and enhance overall patient safety (Leon et al., 2024).

Incident reporting is vital for improving patient safety, but under-reporting is still common. This nationwide survey in Japan studied barriers faced by first- and second-year resident doctors. Among 5810 participants, most had seen at least 1 patient safety incident in the past year, yet less than half actually reported it. The biggest barrier was the time needed to complete a report. Other barriers differed between those who had reported before and those who had never reported. The study shows that while residents often encounter safety problems, many go unreported. To strengthen patient safety, hospitals need to design interventions that address the specific barriers faced by young doctors (Kurihara et al., 2022). Medication errors often happen because some drugs look or sound alike, or their packaging is confusing. They can also occur when brand-name medicines are swapped with cheaper generic versions, when doctors or nurses are interrupted while working, or when medical records are unclear or hard to read. Not all errors are reported, mainly due to fear of being blamed, concerns about patient or family reactions, legal liability, and harsh management responses. Most nurses said that less than 20% of medication errors are actually reported. Older and more experienced nurses reported fewer errors, especially with non-intravenous drugs, compared to younger or less experienced nurses (Brabcova et al., 2023).

2.6 Conceptual Framework

The conceptual framework for this study integrates the independent, moderating, and dependent variables to understand the dynamics that influence healthcare staff's willingness to report incidents. Grounded in theories of organizational behavior and patient safety, the framework seeks to examine how individual perceptions, organizational practices, and leadership support interact to shape reporting behaviors. The visual model provided aligns with this understanding, categorizing these influencing factors into independent, moderating, and dependent variables. This framework serves as a foundation for exploring barriers and enablers of incident reporting within healthcare institutions, specifically in the UAE.

A study in UAE applied the Stimulus-Organism-Response (SOR) framework to understand what drives consumers in the UAE to use telemedicine. Factors like compatibility, trialability, and credibility acted as stimuli, influencing trust, perceived usefulness, and ease of use (organism), which in turn shaped their behavioral intention to adopt telemedicine (response). The findings confirmed that both trust and perceived usefulness strongly affect adoption intentions, and that awareness of technology further strengthens the link between ease of use and intention. Overall, the SOR model effectively explained how external factors impact user behavior in telemedicine (Loutfi et al., 2025).

A study conducted to measure and validate stimulus organism response (SOR) theory, used the SOR framework to explore why people sometimes avoid health information. By analyzing factors like risk perception, information overload, and sadness through structural equation modeling (SEM), the study found that these three played a significant role in driving avoidance, while factors like health anxiety and cognitive dissonance were less influential. The model showed a good fit, supporting the idea that our emotional and cognitive reactions shape how we respond to health information. These insights could help improve how people seek and engage with health-related information worldwide (Wang et al., 2024).

One study used the stimulus organism response (SOR) theory to understand what drives healthcare employees' information security behavior. It shows that while technical safeguards are important, human factors especially security awareness are key to preventing data breaches. Both external pressures, like regulations, and internal factors, such as training and past experiences, shape how employees act. The study presents a practical SOR based framework

to help healthcare organizations improve compliance and protect sensitive data (Alexander et al., 2024).

One systematic review study looked at patient and public involvement (PPI) in healthcare, showing how theory can help us better understand and improve engagement while addressing power imbalances. Although many studies highlight barriers and enablers at both individual and organizational levels, few use a clear theoretical framework. Using the stimulus organism response (SOR) model could help explain how external factors, like policies and resources, and internal factors, like attitudes and knowledge, shape PPI behavior. The findings highlight the need for a whole-system, theory-driven approach, especially in patient safety where PPI is still developing (Ocloo et al., 2021).

Drawing on the stimulus organism response (SOR) theory, a hospital added a new wing, improving both the physical environment such as patient areas, safety, and workspaces and the work environment, including supervisor support, communication, and teamwork. Nurses, as the "organism," experienced these changes and noticed the improvements in their daily work life. This led them to feel more positive about the hospital., seeing higher service quality for patients and stronger commitment to their workplace. The effects were even stronger for nurses who moved to the new facility compared to those who stayed in the old one. Overall, the study shows that better hospital spaces and supportive work environments can boost nurses' satisfaction, commitment, and the quality of the patient care they provide (Janakiraman et al., 2011).

2.6.1 Independent Variables

The independent variables in this study include incident characteristics, fear barriers, training and awareness, and factors motivating staff to report incidents. These variables represent individual-level perceptions and attitudes that directly influence reporting behaviors.

H1. Incident Characteristics

Incident characteristics, such as severity, type, and visibility, are critical determinants of reporting behavior. Severe incidents, particularly those leading to significant harm to patients, are more heightened to be written & disclosed than near-misses or minor errors Most staff knew about the hospital's incident reporting system, but nurses used it more than doctors. Incidents that happen often, are easy to see, or have immediate effects like patient falls or

medication mistakes are reported more. Events that develop slowly, such as pressure ulcers or blood clots from missed prevention, are reported less. The main reason staff don't report incidents is that they rarely get feedback. (Evans et al., 2006).

The perceived importance of an incident often dictates whether staff feel compelled to document it. Research shows that unclear definitions of what constitutes a reportable event further hinder reporting practices (Kaldjian et al., 2008). Inconsistent interpretations of incidents, particularly near-misses, result in missed opportunities for learning and improvement (Reason, 2000). Creating a strong reporting culture is essential to capture accurate information and improve patient safety. Outcomes often result from a combination of individual, team, technical., and organizational factors, and even minor incidents or near misses can indicate underlying risks. Reporting near miss events i.e., events that could have caused harm is especially valuable, as it allows healthcare systems to prevent serious errors before they occur. Other high-risk industries, like aviation and nuclear power, have long used near-miss reporting to improve safety, and healthcare is slowly adopting similar systems (Barach & Small, 2000).

In an intensive care unit study, serious medical errors and adverse events in ICU patients were often linked to mistakes in giving or ordering treatments, especially medications. Errors that were obvious, sudden, or had immediate effects were more likely to be noticed and reported. Slow-developing problems or less visible mistakes were less often reported. Most errors happened due to simple slips or lapses rather than lack of knowledge. This shows that how noticeable and immediate an incident is strongly affects whether it gets reported (Rothschild et al., 2005). A survey in Hamad Medical Corporation showed that internists were less inclined to file an incident report if they themselves or a colleague were directly involved in the event (Mohamed et al., 2021). One study revelated that difficult reporting procedures as one of the incident characteristics as a barrier to report (Mansouri et al., 2019).

One research analyzed 32 studies covering 33,873 children's hospital admissions to learn the nature of adverse events (AEs). A total of 8,577 AEs were found, with the most common being hospital-acquired infections in general wards (6.8%–59.6%) and breathing-related problems in intensive care (10.5%–36.7%). The findings reveal that infections and respiratory issues are the most frequently reported incidents in paediatric care and remain key targets for prevention (Dillner et al., 2022). Review of adverse events in hospitals using eight studies covering 74,485 patient records. About 9% of patients experienced an adverse event, nearly half of which were

preventable. The most commonly written incidents were related to surgeries (39.6%) and medications (15.1%). Other incidents caused minor or no harm, while 7.4% were fatal. These findings show that surgical and drug-related problems are the main types of reported hospital incidents (de Vries et al., 2008). People don't report things very often, even when the reporting systems are anonymous, confidential., or required by rules (Harada et al., 2021).

Most reported incidents were about medications, clinical procedures, or staff behavior. Doctors made only about 1 in 5 reports, and over half were considered high risk. Common causes included personal mistakes, poor training, and communication problems. Almost half of the reports led to no action, though some aimed to improve communication. Reporting increased in some departments but dropped in others, especially labs (Jager et al., 2021). Review of 500 deliveries records in two London hospitals and found 196 incidents. Only about one-quarter were reported by staff, while the risk managers found another small portion. More than half of the problems were discovered only when the researchers checked the notes later. Serious problems were reported more often than minor ones, but many drug errors and less serious incidents were missed (Stanhope et al., 1999).

In one of the studies involving 19 family practices took part and 264 reports were collected. Reporting was higher at the start but later went down, with an average of 1–2 reports each month. Most reports were made by doctors, followed by nurses, while office staff reported the least. Almost all incidents (93%) were considered preventable. Half of the incidents caused some harm, but only a very small number (1%) were serious. The most common problems reported were documentation issues, medication errors, clinical administration, and clinical process problems (O'Beirne et al., 2011). Survey of 338 physicians showed that most believe error reporting improves patient care and said they would report errors causing harm. While 92% said they would report a major error and 73% a minor one, very few had actually done so i.e., only 3.8% reported a major error and 17.8% a minor one. Some even admitted to not reporting real errors (Kaldjian et al., 2008).

Review 6,379 incident reports in a hospital of Barcelona between 2016 and 2019 revelated that the number of reports increasing each year until 2018. The most common incidents were patient falls, problems with medical procedures, and medication errors. Most reports came from the Emergency Department and Obstetrics & Gynaecology. Pharmacists reported the most incidents compared to their group size. The study also showed that the type of incident and the

role of the staff affected how serious or risky they thought the problem was. These patterns can help hospitals understand how staff see patient safety risks and take improvements to make care safer (de la Torre-Perez et al., 2023).

H2. Fear Barriers

"Fear of blame and punitive action" is one of the most significant barriers to incident reporting. Many healthcare organizations operate under a culture of blame, where errors are attributed to individual failings rather than systemic issues. Staff often refrain from reporting incidents to avoid professional repercussions, loss of reputation, or disciplinary actions (Dekker, 2012). This fear is exacerbated in hierarchical healthcare systems, such as those prevalent in the UAE, where junior staff may hesitate to report errors involving senior colleagues (Elmontsri et al., 2017). Shifting from a "blame culture to a learning culture" is essential for overcoming this barrier. Barriers were more complex and included the extra effort needed to report, fear of blame, lack of information, organizational issues, and threats to professional identity (Hartnell et al., 2012).

Another study looked at how hospitals can create a safe environment for staff to report mistakes without fear. The goal was to identify factors that help or prevent error reporting and suggest areas for future research. The authors reviewed 420 articles from 2015–2021 and analyzed 29 high-quality studies in detail. They found that different hospitals use very different approaches to encourage reporting, even when trying to achieve the same goals. Common themes included the importance of leadership, clear policies, and a supportive culture. Barriers often involved fear, blame, or personal biases. The study also highlighted that cultural differences among staff and leaders affect how errors are reported. Overall, the review suggests that organizations need strategies to promote psychological safety so staff feel confident reporting mistakes (Wawersik et al., 2022).

In workplaces with a blame culture, employees are less willing to report incidents, especially when the chance of being caught is low. The effect was particularly strong for conceptual mistakes, such as errors in judgment, compared to simple calculation errors (Gronewold et al., 2013). Almost all nurses in Al Dhafra Hospitals knew about reporting and agreed it was important, but many said lack of time, fear of legal issues, and concern about their reputation stopped them from reporting. Thus, highlighting that creating a supportive, blame-free culture can improve reporting and make patient care safer (Anilkumar et al., 2025). Main barriers to

incident reporting were that the staff didn't know about the reporting system, some felt reporting would not really improve the system i.e., lack of trust in incident reporting system and few others were afraid of being blamed or punished for speaking up (Mohamed et al., 2021). Similarly, a study among pharmacists, showed that most community pharmacists did not know about the official system for reporting adverse drug reactions in Saudi Arabia. A major barrier was the lack of a proper professional environment to support reporting. Many pharmacists also said that reporting forms were not available. Poor understanding of how the reporting process works further discouraged participation. These gaps highlight that both awareness and logistics need improvement to make ADR reporting easier and more effective (Khan et al., 2013).

Healthcare workers shared that many felt fear and worry when submitting a report, as it could trigger investigations that might affect their performance reviews or career growth. Others were concerned it could harm relationships with colleagues or that their reports would not remain confidential (Stewart et al., 2018). A survey of 251 nurses in seven hospitals in Iran showed three main barriers to reporting among nurses in intensive care units. These include fear of punishment, difficult reporting procedures, and lack of support from managers. The study suggests that creating a safe and supportive environment will encourage nurses to report errors honestly, which can improve patient safety (Mansouri et al., 2019; Alves et al., 2019). Another study in intensive care units revealed that fear of punishment, legal trouble, or problems at work are the main reasons for not reporting. They also felt unsafe because managers may blame them instead of helping and hospitals often do not look for the real cause of mistakes, so nurses see no benefit in reporting (Peyrovi et al., 2016). Interviews with sixteen employees and leaders from two large hospitals showed reporting depended on how serious the error was, personal attitudes, and feedback after reporting (Polisena et al., 2015). The main barrier was fear of punishment or negative consequences. Other reasons included poor reporting systems, lack of teamwork between departments, insufficient training, no feedback or motivation, and a blame-focused culture. Improving these areas can help nurses report errors more freely and improve patient safety (Hamed et al., 2021). A study in Indonesia suggested that Incident report system should not blame people and keep reports private i.e., confidentiality (Dhamanti et al., 2019). 3,000 research papers review found many reasons why staff do or don't report incidents at work. The biggest barriers were fear of punishment and complicated reporting systems (Archer et al., 2017).

Many young doctors in Japan see patient safety problems but do not report them because of fear of blame or punishment. Even though most face such incidents, less than half file a report. Hospitals need to create a safe and supportive culture so doctors can report without fear (Kurihara et al., 2022). Apart from mentioning that blame culture in hospitals has prevented them from reporting incidents, they also mentioned that unclear reporting guidelines also make the process confusing and discourage staff from speaking up. Poor working conditions and lack of management support add to the problem. Some staff also worry about how reporting might affect their job satisfaction or relationships at work. Overall, these barriers reduce the number of reports and limit opportunities to improve patient safety (Alsahli et al., 2024).

Six main barriers were identified: lack of time, feeling reporting is useless, fear of punishment, poor education on reporting, reporting seen as a sign of incompetence, and hard-to-access forms (Brubacher et al., 2011). Several barriers that prevent healthcare staff from reporting incidents, grouped into seven main themes. These include the heavy burden of reporting, fear of punishment or legal action, worry about breaches of confidentiality or embarrassment, and the feeling that reporting would not lead to any change. Other barriers were not knowing how to report properly and working in a culture that blames staff for mistakes. These barriers make staff hesitant to report incidents, which can reduce opportunities to learn from errors and improve patient safety (Jennings & Stella, 2011). Among 838 nurses surveyed in five hospitals in Taiwan, nearly half admitted they had not reported errors made by themselves or coworkers. The main reasons included fear of consequences, worries about how reporting might affect nursing quality or professional growth, and differences in attitudes when reporting their own versus others' mistakes. Nurses who had personal experience with errors were also less likely to report. The findings suggest that hospitals need to educate staff on the true purpose of reporting improving patient safety, not punishing individuals and provide clear support and encouragement to make reporting a routine part of nursing practice (Chiang et al., 2010).

H3. Training and Awareness

Training and awareness are pivotal for equipping staff with the knowledge and skills required to recognize and report incidents effectively. Studies have shown that organizations with comprehensive training programs see significantly higher reporting rates (Pukk-Harenstam et al., 2009). Training also addresses misconceptions about reporting systems, such as the belief that reporting is time-consuming or unlikely to lead to change. Additionally, raising awareness about the non-punitive nature of reporting systems helps build trust and encourages

participation (Benn et al., 2015). One study looked at incidents reported from adult and paediatric intensive care units (ICUs) in the U.S. using a web-based, voluntary, and anonymous reporting system. Data were collected from July 2002 to June 2004. The main focus was on incidents that caused or might have caused patient harm. Training and education problems contributed to 49% of incidents, while teamwork issues were involved in 32%. Many incidents had two or more contributing factors, and the risk of harm increased as the number of contributing factors increased. The study concluded that the ICU Safety Reporting System is a useful tool for identifying hazards across multiple ICUs. Data trends suggest that incidents with multiple contributing factors pose higher risks, highlighting areas where safety improvements and further research are needed (Pronovost et al., 2006).

To learn how hospital staff in New South Wales, Australia, used an electronic system to report safety incidents, researchers surveyed 2,185 health workers about their reporting behavior, training, system usability, feedback, and workplace safety culture. About 79% of respondents used electronic system, and those who reported more incidents had received good training and experienced supportive factors like easy system access and feedback. Staff who reported fewer incidents often faced cultural barriers, like a poor safety culture at work. System security and accessibility were positive factors for everyone. The study shows that proper training and a supportive safety culture encourage more incident reporting, while cultural barriers can limit reporting (Braithwaite et al., 2010). Swiss hospitals introduced incident reporting systems earlier and placed strong emphasis on staff training. They more often provided systematic introductory training on how to use these systems, helping staff understand and engage with reporting more effectively (Manser et al., 2017).

Most nurses didn't know about incident reporting systems, and only a few had ever used them. Serious issues like medication mistakes and privacy breaches were often not reported. Many nurses believed reporting was important but didn't do it. Fear of punishment, no feedback, too much work, and confusing forms were common reasons. Nurses with more experience or working in better hospitals reported more often (Elmi et al., 2025). Out of 354 expected, 334 healthcare workers filled out the survey, giving a high response rate. Only about 29% of them reported patient safety incidents, which is quite low. Nurses, those with job training, teamwork, open communication, and management support were more inclined to report incidents (Shemsu et al., 2024).

One major barrier to reporting adverse or sentinel events is the devoid of proper education and training. Many healthcare staff are unsure the type of incidents that should be reported, how to report them, or why reporting is important for patient safety. Without this knowledge, reporting is often seen as unnecessary or outside their role. The absence of clear education also contributes to fears of blame, guilt, or stigmatization after reporting. Strengthening education and awareness can help staff understand the value of reporting, increase confidence in the process, and build a stronger culture of safety (Lee et al., 2018). Knowledge gaps were also clear, only about half knew how to report, and less than 40% knew what should be reported. Doctors were more likely to report if they believed in forgiveness, knew the reporting process, and were faculty rather than residents. Although willingness exists, actual reporting is very low, pointing to the need for better education and supportive culture (Kaldjian et al., 2008). Healthcare professionals faced major challenges in reporting near-miss incidents. Key barriers included "lack of knowledge" about the reporting system, difficulty in identifying what counts as a near miss, and negative attitudes or poor reporting practices. A document review showed that near misses did occur but were not entered into the official reporting system. In 2019, the maternity and neonatal units recorded 210 actual incidents, representing 62% of the 357 deliveries. These findings highlight the urgent need for better training, clearer definitions, and stronger reporting practices to improve patient safety (Ntlanganiso, 2022).

The main obstacles were educational gaps, lack of motivation, and weak managerial support. Many nurses lacked knowledge about error reporting, received little feedback, and did not feel supported after reporting. While two-thirds said they had reported errors, more than 80% expressed negative attitudes toward fully disclosing them to patients (Najafpour et al., 2020). 79% of trained staff reported incidents compared to only 63% of those without training. This shows that proper training and giving feedback can encourage more staff to report, which helps improve patient safety and hospital quality (Bovis et al., 2018).

Doctors and nurses in Saudi Arabia view and use the Occurrence Variance Reporting (OVR) system, most staff knew about the system, but nurses showed better knowledge, stronger use, and a more positive attitude than doctors. Some differences were also linked to nationality, language, and workplace. The need to improve doctors' awareness and attitudes toward reporting for better patient safety (Alboliteeh et al., 2017). Training plays an important role, staff who had received prior training on error disclosure scored much higher in both general culture and trust culture. Building a strong culture of disclosure, supported by training, is more

effective in encouraging staff to be open with patients about mistakes than relying only on teamwork or overall safety culture (Etchegaray et al., 2012).

H4. Motivators

Motivational factors, such as ethical responsibility, patient safety awareness, and recognition of the benefits of reporting, play a crucial role in shaping staff behavior. Staff are more likely to report incidents when they perceive that their actions contribute to organizational learning and patient safety improvements (Singer et al., 2009). A study in Estonia looked at how nurses and nursing managers use and share information from incident reporting systems. Nurses emphasized that sharing lessons learned is vital for raising patient safety awareness, preventing errors, and maintaining public trust. However, due to a lack of structured strategies, information was often exchanged informally through private discussions or self-initiated investigations. Participants highlighted the need for training, stronger patient safety competencies, open communication, and sufficient resources, supported by leadership and a positive safety culture, to improve incident reporting practices (Uibu et al., 2025).

A study focused on nurses, since they are most directly associated with medication administration. Most of the participants were registered nurses with bachelor's degrees, full-time positions, and several years of experience. The analysis highlighted key themes related to the challenges of reporting medication errors, with culture playing an important role in how nurses perceived and responded to such incidents. The study provided fresh insights into the Jordanian context by looking closely at nurses' views across different hospital types—government, private, and university (Ali et al., 2021). Providing positive reinforcement, such as feedback on reported incidents and recognition of contributions to safety, can further enhance motivation (Howell et al., 2017).

Importantly, both the general culture of disclosure and trust culture were linked to a higher intention among staff to tell patients about a hypothetical error, while teamwork and safety culture did not predict this behavior (Etchegaray et al., 2012). Effective feedback resulting from incident reporting in healthcare is key to raising awareness of risks and preventing future errors. Research shows that hospitals often underuse the information from reports to improve safety. By studying healthcare and high-risk industries like aviation and energy, it was found that feedback works best when it is timely, credible, actionable, and shared across all levels of the organization. Good feedback increases staff awareness of safety issues, motivates reporting,

and drives improvements in clinical processes. Closing the safety-feedback loop ensuring reports lead to visible changes is essential for learning and safety. More study is needed to identify the best ways to provide feedback that truly enhances awareness and safety (Benn et al., 2009).

Survey of 175 senior nursing students showed that willingness to report was strongly linked to systems thinking, positive attitudes toward error reporting, and high ethical sensitivity. Together, these factors explained over one-third of the students' willingness to report adverse events. For near misses, attitude toward reporting was the key driver. The findings highlight that improving willingness to report among future nurses can lead to more open communication, early detection of risks, and safer care. Strengthening education in ethics, error reporting, and systems thinking is therefore critical to fostering a strong reporting culture (Kim & Yu, 2021). Transparency in knowing how to report and what to report has been one of the main motivators to report incidents. Individual beliefs about the effectiveness of reporting and management support also increased willingness to report. Nurses and physicians were influenced by slightly different factors. Making reporting systems clear, participatory, and showing how reports improve patient safety can encourage more reporting and help prevent errors (Pfeiffer et al., 2013).

Analysis of the 417 hospital staff responses from across the UAE to understand what helps build a stronger quality and safety culture in healthcare, showed that two factors good feedback about errors and open communication play an important role in encouraging staff to support safety. The results suggest that hospital leaders should focus on creating a supportive environment where staff feel safe to speak up. This means giving quick and useful feedback when errors happen, encouraging open communication, and improving systems and processes instead of blaming individuals. By doing this, hospitals can build a stronger culture of quality and safety that benefits both staff and patients (Santa et al., 2018).

The incentives to reporting included protecting patients, protecting healthcare providers, and meeting professional requirements. Reporting was encouraged when the process was made easier, communication gaps were closed, and staff were educated and trained. Participants said they would report more often if they had proper education, quicker feedback, and simpler reporting systems. Healthcare staff who had proper training, supportive teamwork, and open communication in their units were more motivated to report incidents (Hartnell et al., 2012).

Most importantly, when management actively supported staff, reporting went up. Training, teamwork, open discussions, and strong leadership are the main motivators that encourage healthcare professionals to report safety problems (Shemsu et al., 2024).

Three main factors that make it easier for healthcare professionals to report patient safety incidents. The first is creating a strong patient safety culture, where "staff feel safe to report incidents without fear of blame or punishment". The second is having clear hospital policies and guidelines in place, which give staff a proper framework to follow when disclosing errors. The third important factor is education and training. When healthcare workers are trained on how to disclose incidents properly, they feel more confident and are more likely to share mistakes openly. Seeing colleagues disclose errors also encourages others to do the same. Together, these three elements safety culture, policies, and training can greatly improve transparency and trust in healthcare (Ock et al., 2017). Careful review of all reported incidents leading to developed new protocols and safety measures, and shared updates with staff in different ways has improved incident reports from 20 to 36 reports per 1000 patient days, especially for "no harm" events, which doubled, suggesting that staff felt more comfortable reporting even small issues. The time needed to close incident reports dropped from 70 days to just 13 days (Arabi et al., 2016).

2.6.2 Moderating Variables

The moderating variables include organizational risk management policies, leadership and supervisor support, and procedures and techniques used by quality departments. These variables represent institutional and systemic factors that influence how individual perceptions translate into reporting behavior.

H5. Organizational Risk Management Policies

Policies that prioritize non-punitive approaches to incident reporting are fundamental to fostering a culture of safety. Accreditation standards, such as those set by the Joint Commission International (JCI), emphasize the need for robust reporting systems that focus on learning and improvement rather than punishment (JCI, 2021). However, policies must be clearly communicated and consistently implemented to build trust among staff. Inconsistent application of policies, such as selective enforcement of disciplinary actions, undermines the credibility of reporting systems and discourages participation. One study explored healthcare staff perceptions and attitudes toward incident reporting and how risk management policies

affect their behavior. A descriptive cross-sectional survey was conducted with 108 healthcare professionals from different organizations in the UAE using convenience sampling. The results showed that most staff felt their organization encouraged a non-punitive and blame-free culture. About 69% agreed that risk management policies promoted this environment, while 30% did not feel the same. Around 79% said these policies involved them in analyzing incident reports, with 13% feeling otherwise. Most importantly, 81% felt protected from punishment after reporting incidents, though 10% disagreed.
Healthcare organizations should develop and enforce risk management policies that promote a blame-free culture, involve staff in analyzing incidents, and protect them from consequences when they report errors. Doing so can encourage more reporting, improve patient safety, and lead to better healthcare outcomes overall (Kumar & Bhalla, 2024).

Studies showed that when reporting was voluntary, more mistakes were identified compared to mandatory reporting. Many of these incidents had the potential to harm patients. Looking at errors from a system-wide perspective helped reveal the root causes. However, there was limited evidence on whether changes made to the system actually led to safer patient care (Snijders et al., 2007). Helpful factors included good support from the organization and easy reporting processes, need to address all these issues together to encourage more people to report incidents (Archer et al., 2017).

Imperial College Healthcare in London worked with researchers to improve patient safety and create a fair, learning-focused work culture. They asked staff for feedback and then introduced seven practical changes between 2016 and 2018. The team monitored safety culture, incident reporting, patient harm, and never events. Results showed that safety culture and reporting improved in some areas, and staff responded positively to most of the changes. The project highlighted that hospital policies play a big role in giving teams ownership over safety culture. It also showed that using careful research methods helps make safety improvements more effective. Overall, involving staff and using evidence-based changes can make hospitals safer for patients (Flott et al., 2018).

Voluntary incident reporting has been a central tool for improving patient safety, it encourages healthcare workers to record errors and adverse events so that organizations can learn and prevent future harm. However, its impact has been mixed. Reporting is often inconsistent, as staff interpret what should be reported differently, and some areas receive more attention than

others. Over time, this has caused reporting fatigue and reduced motivation among healthcare workers (Markes & Diab, 2021).

In Scotland, all error reporting is voluntary, and information is not shared between Health Boards, leading to ongoing preventable errors and in England had introduced mandatory reporting of serious events in 2010, with fines for noncompliance. Contrary to the literature, patient groups in Scotland support a similar mandatory system with public disclosure to ensure openness and safety. This study recommended that Scotland should adopt mandatory reporting for serious incidents while keeping near-miss reporting voluntary (Eadie, 2012).

H6. Leadership and Supervisor Support

Leadership has a central role in shaping organizational culture and influencing staff attitudes toward incident reporting. Managers and supervisors who demonstrate a commitment to patient safety, provide constructive feedback, and protect reporters from retaliation create an environment of trust and accountability (Singer et al., 2009). On the other hand, a lack of visible leadership support can erode trust and reduce reporting rates. Leaders must also address cultural and hierarchical dynamics, particularly in multicultural healthcare settings like the UAE, where staff from diverse backgrounds may have differing expectations and experiences related to reporting (Bates et al., 2016). Patient safety is critical in hospitals, and nurses play a key role in preventing accidents. In Korea, comprehensive nursing service wards don't have patient guardians, so nurses must be vigilant. This study surveyed 130 nurses to see how their critical thinking and the culture of their department affected reporting of safety incidents. Results showed that nurses with stronger critical thinking skills reported incidents more, especially when their department had a positive safety culture. A supportive culture where staff can freely share concerns and opinions helped increase reporting. The study suggests that hospitals should focus on building a good safety culture and training nurses to think critically to improve incident reporting and prevent future accidents (Kim et al., 2024). Fear of punishment, time concerns, and lack of support made reporting harder. Managers should offer regular training, encourage open talk, and support staff to improve reporting (Shemsu et al., 2024). When hospital departments in Palestine have a stronger safety culture, they see fewer patient problems and errors (Najjar et al., 2015)

Effective reporting systems need to be easy to use, non-punitive, and linked to learning from errors to prevent recurrence. Current barriers include fear of punishment, poor safety culture,

unclear reporting criteria, and lack of feedback or analysis of reports. Using systematic methods based on human factors and learning from latent errors can help identify root causes. Providing clinicians with feedback on incident analyses and actions taken keeps them engaged and encourages reporting (Mahajan, 2010).

The most important obstacle to writing incidents was fear of being reprimanded by supervisors or department authorities. Many nurses hesitated to disclose mistakes because they worried about punishment, blame, or negative reactions from managers. This culture of fear prevents open communication and reduces opportunities to learn from errors. The study emphasizing the need for hospital leaders to build trust, create a supportive, blame-free environment, and encourage honest reporting. By doing so, managers can help reduce hidden errors and strengthen patient safety (Vahednasiri & Eini, 2021).

In a nationwide survey from Finland (Kouvo et al., 2020), health professionals reported that weak leadership culture and lack of organizational support discouraged reporting. Many felt that incident reporting was not valued or acted upon, which reduced motivation. On the individual level, time pressure was a major barrier, with busy schedules leaving little opportunity to file reports. Using Ajzen's theory of planned behaviour, the study showed that both cultural and time-related factors strongly shape non-reporting. Strengthening leadership commitment and reducing workload barriers are essential to improve reporting practices and patient safety.

Medication administration errors are often underreported by nurses, in part due to harsh responses from hospital management. Nurses fear being blamed, facing legal liability, or receiving negative reactions from supervisors, which discourages them from reporting even serious errors (Brabcova et al., 2023).

H7. Procedures and Techniques Used by Quality Departments

The success of incident reporting systems lies on the procedures and techniques employed by quality departments to manage and analyze reports. User-friendly reporting platforms, such as electronic incident reporting systems, reduce the administrative burden on staff and increase participation rates (Clarke et al., 2017). Additionally, quality departments must establish clear processes for analyzing incident data, identifying root causes, and implementing corrective actions. The provision of regular feedback to reporters ensures that staff understand how their

reports contribute to organizational improvements, reinforcing their engagement with reporting systems (Jones et al., 2018).

In healthcare, reporting mistakes or near misses is important, but it only helps if staff receive good feedback. This study looked at how feedback works in healthcare and compared it with other high-risk industries like aviation, energy, and shipping. Researchers found that just collecting reports is not enough — staff need to see real changes happen as a result. Effective feedback means giving clear information, sharing lessons widely, and showing how problems were fixed. It also motivates staff to keep reporting if they know their efforts make a difference. Leadership support, quick actions, and open communication are key parts of good feedback. The study identified 15 important requirements for making feedback effective, such as credibility, speed, and reaching all levels of the organisation. The most important point is to "close the loop," so every report leads to visible positive changes in patient safety (Benn et al., 2009).

A total of 16,019 incident reports over five years in a Finnish healthcare organization revealed that only 2.7% included written recommendations to prevent similar events in the future. These recommendations mainly related to training, patient care, guidelines, equipment, IT systems, and the hospital environment. The findings show that while many reports are made, very few result in changes. Clear rules are needed on what should be reported, when managers must act, and how to ensure recommendations are carried out. More follow-up is necessary to make reporting systems truly improve patient safety (Liukka et al., 2019).

When comparing hospitals in Switzerland and Germany, some clear differences were found in how incident reporting systems (IRS) were used. Swiss hospitals had introduced IRS earlier, used them more widely, and more often provided systematic training for staff. German hospitals, on the other hand, more frequently had standardized methods for analyzing reported events. The study also showed that IRS practices were linked to hospital characteristics, such as the type of hospital and whether clear safety goals were in place. Having a dedicated role to coordinate risk management also made a difference. These factors together influenced how well hospitals used IRS to improve safety (Manser et al., 2017). For only about one-third incidents reported, actions were taken to prevent them from happening again. Incomplete reporting and poor communication limit the usefulness of incident reporting system. To

improve patient safety, incident reporting should focus on taking corrective actions effectively (Goekcimen et al., 2023; Dhamanti et al., 2019).

Feedback and follow-up part of the reporting system was the weakest. Many reports were made, but little learning or improvement seemed to come from them. The actions taken didn't really fix the main problems that caused the incidents (Jager et al., 2021). Nurses know more about reporting systems than physicians, physicians reported incidents less than half the time. The main barriers to reporting were believing that reporting near misses is pointless, "lack of feedback, and fear of disciplinary action". Differences were observed between staff in accredited and nonaccredited hospitals, with nurses in accredited hospitals generally showing better reporting practices (AbuAlRub et al., 2015). Staff sometimes do not report adverse incidents, in five NHS hospitals one in three staff members had never reported an incident, and many said they did not report because nothing was done after their past reports. Staff who received feedback and training were much more likely to report problems (Bovis et al., 2018).

Learning from patient safety incidents is often hard because information is incomplete, and it's not always clear what could have been prevented. Study observed hospital teams reviewing incidents and looked at what helped or hindered the process. Team discussions worked best when leadership was supportive and staff could openly participate. They struggled when leaders were too controlling, when workloads were high, or when organisational support was weak. Many teams also failed to dig deep into causes, gather extra information, or find solutions across departments. Strong leadership, proper training, supportive systems, and enough resources are essential to improve how teams learn from safety incidents (Anderson & Kodate, 2015). Only a small number of studies (five) talked about giving feedback or sharing knowledge after incidents, for example through meetings, written updates, or visual reminders. However, while some hospitals do recommend improvements after safety incidents, there is very little evidence on how these learnings are shared or applied across organizations. To make reporting systems effective, hospitals need to ensure feedback loops are in place and staff have the right skills in patient safety (Uibu et al., 2020).

2.6.3 Dependent Variable: Measurement of Willingness to Report

The dependent variable in this framework is staff's willingness to report incidents. Willingness to report is a complex behavior influenced by the interplay of individual perceptions,

organizational practices, and external factors. It reflects the extent to which healthcare staff feel motivated, supported, and empowered to engage with reporting systems.

Staff willingness to report incidents can be assessed through surveys, interviews, and analysis of reporting data. Key indicators include the frequency of reported incidents, the types of incidents reported, and staff feedback on reporting systems. Understanding the factors that influence willingness to report is essential for designing targeted interventions that address barriers and enhance engagement (Hartnell et al., 2012). Organization's attitude toward handling mistakes strongly shapes people's willingness to report incidents. When errors are seen as opportunities to learn from rather than reasons for blame, staff believe their colleagues are more likely to report mistakes openly. Thus, suggesting that building a positive, blame-free culture is key to increasing employees' willingness to report incidents and ensuring safer, more ethical practices (Gronewold et al., 2013).

320 healthcare workers in China suggested that organizational trust plays a key role, workers who trust their organization are more willing to report incidents safety. Healthcare workers' willingness to report incidents is dependent on the trust in the organization as it plays a big role when staff believe their hospital will be fair and supportive, they are more open to reporting mistakes. People are more motivated by the benefits of reporting, such as improving patient safety, than by fears of punishment or blame. Overall, building a culture of trust and showing staff the positive outcomes of reporting can increase their willingness to report (Zhao et al., 2021). When nurses are more actively involved in safety practices, they are more inclined to feel supported by the culture and report incidents. While nurses still have only a modest willingness to report, but strengthening safety practices and a positive reporting culture can encourage more open and voluntary reporting (Chiang et al., 2019).

2.6.4 Implications of Reporting Behavior

Willingness to report incidents has direct implications for patient safety and organizational learning. High reporting rates enable healthcare organizations to identify trends, analyze risks, and implement preventive measures. Conversely, underreporting limits the effectiveness of reporting systems and perpetuates safety risks. By fostering a culture of safety and addressing the factors that influence reporting behavior, healthcare organizations can achieve significant improvements in patient outcomes and organizational performance (Panagioti et al., 2019). Drug administration errors were also common, affecting 27% of administrations, but none of

these incidents were reported. Interestingly, one hospital had more incident reports than another, even though its actual error rate was lower. The findings of this study show that relying on incident reports alone does not accurately reflect the true occurrence of medication errors in hospitals. Reported incidents cannot reliably indicate patient risk or hospital performance. The study suggests that new approaches, such as analyzing electronic clinical data, are needed to better detect, report, and prevent medication errors (Westbrook et al., 2015). Review of incidents of ten years in a hospital and incident reports to track serious events and identified areas needing education. Having a standard way to collect, analyze, and share these reports across hospitals could improve patient safety and resuscitation practices (Djarv, 2024).

Survey of 192 nurses from five hospitals to identify what influences reporting of patient safety events identified that the most important factors were nurses' perception of the importance of patient safety, the overall safety culture, their attitude toward reporting incidents, and previous experience with near-miss reporting. Together, these factors explained 33% of reporting behavior. To encourage reporting requires targeted education, standardized procedures, and policies that strengthen patient safety reporting systems. Such measures can help prevent accidents and reduce repeated errors in healthcare settings (Al-Mugheed et al., 2023).

Perceived benefits of reporting, such as learning from errors or improving patient safety, were stronger motivators than perceived risks. Building a culture of trust and emphasizing the benefits of reporting can therefore increase willingness to report, helping organizations lower errors and improve patient safety (Zhao et al., 2021). Patient safety is a central part of improving healthcare quality, and efforts often focus on identifying and learning from adverse incidents. In the NHS, reporting systems are well established, and higher reporting is linked to a stronger safety culture (Kelly et al., 2016). Lessons from healthcare and high-risk industries like aviation and rail suggest that providing clear, useful feedback helps staff distinguish what went wrong and how to fix it, which encourages more reporting in the future. When reports lead to visible improvements in systems, they boost safety awareness, motivate staff, and prevent repeated errors. Good reporting and feedback can improve patient care, make healthcare processes safer, and create a culture where learning from mistakes is valued (Benn et al., 2009).

Incentives for reporting patient safety events included creating a culture that values and recognizes the importance of reporting, providing multiple and easy ways for staff to submit

reports, and giving feedback that shows how reported incidents lead to real improvements. When healthcare workers see that their reports make a difference, they are more motivated to participate in reporting. By addressing obstacles such as time constraints, fear of punishment, and lack of knowledge, and by strengthening these incentives, hospitals can improve the accuracy and frequency of reporting. This, in turn, helps the organization learn from mistakes, make necessary changes, and ultimately enhance patient safety (Brubacher et al., 2011). Incident Reporting (IR) systems allow hospitals to get enlightened from mistakes and improve patient care. By recording and analyzing incidents, hospitals can identify patterns, uncover system weaknesses, and prevent future harm. Most critical incidents result from multiple factors, not just human error, so understanding the root causes is key. When staff report incidents in a supportive, non-punitive culture, hospitals can implement changes that enhance safety, reduce risks, and improve outcomes for patients. IR systems turn errors into opportunities for learning and continuous improvement in healthcare (Ahluwalia & Marriott, 2005)

2.6.5 Integrative Perspective

The conceptual framework emphasizes the interconnectedness of independent, moderating, and dependent variables. Incident characteristics, fear barriers, training, and motivators represent individual-level factors that influence staff perceptions and attitudes toward reporting. These factors are moderated by organizational policies, leadership, and quality department practices, which create the environment within which reporting systems operate. Together, these variables determine staff willingness to report incidents, shaping the importance of incident reporting systems and their result on patient safety.

The inclusion of moderating variables highlights the importance of context in shaping reporting behavior. For example, even when staff are motivated to report incidents, organizational obstacles such as unclear policies or lack of leadership support can hinder their ability to do so. Conversely, strong institutional support can mitigate individual-level barriers and enhance reporting rates. This integrative perspective points out the need for a holistic approach to improving incident reporting practices.

2.6.6 Applications of the Framework

The conceptual framework has practical applications for healthcare organizations seeking to enhance their incident reporting systems. It provides a well-structured approach for learning

and addressing the factors that influence reporting behavior, enabling organizations to design targeted interventions. For example:

- Organizations can develop training programs that address fear barriers, raise awareness about reporting systems, and emphasize the importance of reporting near-misses.
- Institutions can review and revise their risk management policies to ensure consistency and alignment with international standards.
- Leadership training initiatives can give managers with the tools and knowledge to improve the culture of safety and provide constructive feedback to staff.
- Investments in user-friendly electronic reporting platforms can streamline reporting processes and increase participation rates.

By applying this framework, healthcare organizations can create an environment that supports incident reporting, fosters a culture of safety, and enhances patient outcomes.

The conceptual framework integrates independent, moderating, and dependent variables to give a comprehensive understanding of the factors "influencing incident reporting behavior". It highlights the connection between individual perceptions, organizational practices, and systemic factors, stressing the relevance of an integrated and overall approach to improving reporting practices. In the context of the UAE, the framework offers valuable insights into the unique cultural and organizational dynamics that shape reporting behaviors. By removing or negotiating the barriers and enhancing enablers identified in this framework, healthcare organizations can enhance their reporting systems, implement a culture of safety, and achieve significant improvements in patient safety outcomes.

2.6.7 Conceptual model summary

This conceptual model explains incident reporting behavior as the outcome of interactions between independent variables, moderating organizational factors, and system-level outcomes. Incident characteristics (such as severity and type), reporting barriers (including fear of blame, workload, time constraints, and unclear definitions), and motivators (ethical responsibility, patient safety values, and organizational incentives) directly influence healthcare staff's decision to report incidents. These independent factors shape individual judgment about whether an event is worth reporting and whether the perceived risks of reporting outweigh its benefits.

The relationship between these inputs and reporting behavior is moderated by organizational culture, leadership, and organizational risk management policies. A just culture, visible leadership commitment to safety, and non-punitive reporting policies strengthen the positive effects of motivators and reduce the impact of barriers, whereas punitive or hierarchical cultures amplify underreporting. The dependent outcome—staff engagement with incident reporting systems—is reflected in the frequency, completeness, and quality of reports. Feedback loops reinforce the model, as timely feedback and visible system improvements enhance trust in the reporting process and sustain ongoing engagement, ultimately supporting organizational learning and patient safety improvement.

2.7 Context of UAE Healthcare

The United Arab Emirates (UAE) has been working hard to build one of the best healthcare systems in the world. In the past ten years, the government has made big changes like making health insurance mandatory, growing the private healthcare sector, and separating regulators from hospitals that provide services. These steps aim to make care safer, improve quality, and hold hospitals accountable for the services they provide.

The United Arab Emirates (UAE) has built a strong healthcare system that combines government-sponsored services with a rapidly growing private sector, both of which provide care of international standards. Regulation takes place at both the Federal and Emirate levels through key authorities such as the “Ministry of Health and Prevention (MOHAP)”, “Department of Health (DOH)” and “Dubai Health Authority (DHA)”. Over the recent 20-30 years, the UAE has successfully eliminated many infectious diseases such as malaria, measles, and polio, while new national vaccination campaigns now protect against chickenpox, pertussis, and rotavirus. Public health measures have also ensured universal access to clean water and modern sanitation across the country. Importantly, maternal and child health indicators demonstrate remarkable progress: neonatal mortality has fallen to 5.54 per 1,000 live births, infant mortality to 7 per 1,000, and maternal mortality to just 0.01 per 100,000. These achievements highlight the UAE’s commitment to continuous healthcare improvement and its alignment with global best practices in patient safety and population health (Ministry of Foreign Affairs, 2024).

The United Arab Emirates (UAE) has set a national goal of creating a world-class health system, with quality management and risk management as central pillars of reform. Over the

past decade, major changes have been introduced, including mandatory private health insurance, expansion of the independent sector, and the distinction of regulatory oversight from service delivery. These reforms aim not only to improve access and efficiency but also to strengthen systems of accountability, patient safety, and continuous quality improvement. A review of studies published between 2002 and 2016 highlighted important progress in areas linked to quality and risk management. Patient satisfaction with services is consistently high, and an increasing number of hospitals are accredited against international quality standards, reflecting structured approaches to safety and performance. Successes have also been recorded in maternal and child health outcomes, as well as life expectancy. However, significant risks remain, particularly the rising burden of chronic diseases and questions around whether reforms adequately address their root causes. The findings highlighted that although the UAE has made notable strides in embedding quality and safety into its health system, much of the research has focused on processes rather than outcomes. For stronger assurance, future work should emphasize measurable indicators of quality and risk reduction, particularly in relation to chronic disease management, patient safety culture, and incident reporting. This will help policymakers and healthcare leaders evaluate whether reforms are effectively translating into safer, higher-quality care (Koornneef et al., 2017).

The reforms in Abu Dhabi's health system have greatly increased access to care and boosted patient satisfaction, though experts say it is still too early to know if they have truly improved long-term health outcomes. More people are now covered by health insurance, and the use of services like outpatient visits and emergency rooms has gone up sharply. Private investment has also grown, and more reliable data is being collected to guide improvements. However, many Emiratis still prefer to seek treatment abroad, showing that there are still areas where trust in local care needs to grow. Insurance coverage has also created some new challenges. For example, citizens on the government-funded "Thiqa" scheme make up only 16% of the insured population but account for 40% of claims, partly due to higher medical needs and lower out-of-pocket costs. Outpatient and emergency visits have risen faster than population growth, which may mean that unmet medical needs are finally being addressed. But it could also suggest "overuse" of services because insured patients may seek care more often than necessary. Comparing UAE's usage levels with countries like the UK and USA shows that outpatient and ER visits are much higher in Abu Dhabi, raising questions about whether this is due to real health needs, referral habits, patient expectations, or simply the ease of having insurance (Blair & Sharif, 2013).

The UAE's multicultural workforce necessitates culturally sensitive approaches to incident reporting. Studies highlight the importance of culturally competent leadership and policies that accommodate diverse communication styles (AlYammahi et al., 2021). For instance, expatriate staff from high-context cultures may require different approaches to communication than those from low-context cultures. Additionally, fostering interprofessional collaboration mitigates the negative impact of hierarchical barriers (Khan et al., 2019). By emphasizing shared goals and mutual respect, healthcare organizations can create environments where all staff feel empowered to report incidents.

Public hospitals in Abu Dhabi have implemented the JAWDA initiative, emphasizing transparency and accountability in reporting (HAAD, 2017). A study revealed a 35% increase in reporting rates following targeted training programs (Al-Zarouni et al., 2021). These programs focused on aligning staff perceptions with organizational goals and reducing fears of punitive action.

Private hospitals in Dubai have adopted advanced incident reporting management system integrated with patient safety dashboards. These systems provide real-time alerts, enabling proactive incident management (Ali et al., 2020). Additionally, private hospitals have invested in training and feedback mechanisms to enhance staff engagement. Case studies show that private sector initiatives often serve as models for public sector reforms due to their flexibility and resource availability. Despite progress, challenges persist, including "resistance to change, limited resources, and varying levels of staff engagement". Addressing these challenges requires sustained efforts to build trust, enhance training programs, and implement culturally sensitive policies. Future research should focus on long-term outcomes of IRMS interventions and strategies to address the unique needs of expatriate workers (Al-Suwaidi et al., 2023). Additionally, exploring the integration of artificial intelligence in incident reporting management system could provide new avenues for predictive analytics and trend identification. Staff perceptions and attitudes are important to the effectiveness of incident reporting and management systems. While the UAE has made significant strides in fostering a culture of safety, continued efforts are needed to address barriers and leverage technology. By prioritizing education, leadership, and cultural sensitivity, UAE hospitals can enhance their Incident reporting management system and ensure better patient outcomes. Future initiatives

should focus on integrating advanced technologies, fostering interprofessional collaboration, and promoting a non-punitive culture to sustain long-term improvements in patient safety.

Application of Total Quality Management (TQM) to improve patient safety, performance, and cost-effectiveness was studied. Survey of senior staff in two public hospitals in Dubai, analyzing 356 responses out of 600 questionnaires showed that successful TQM requires strong commitment from top management, active employee involvement, proper training, recognition and rewards, effective process management, strategic planning, good use of information, a supportive culture, continuous improvement, and customer focus. Among these, leadership commitment and focus on patients were the most critical factors. Without strong leadership and patient-centered care, TQM is unlikely to succeed providing valuable guidance for hospital managers aiming to adopt quality practices and improve healthcare services (Aburayya et al., 2020).

2.8 Gaps in Literature

Incident reporting systems are integral to achieving safer healthcare environments. By providing a mechanism to identify risks and track trends, these systems enable organizations to implement targeted interventions and measure their impact (Panagioti et al., 2019). For example, data from incident reports has been used to redesign surgical checklists, improve medication safety protocols, and enhance staff training programs (Clarke et al., 2017).

Also, incident reporting contributes to a culture of accountability and continuous improvement. When staff see their reports leading to meaningful change, they are more likely to engage with reporting systems and encourage a culture of safety within their organizations (Singer et al., 2009). However, achieving these outcomes requires addressing the barriers and enablers discussed in this review. In the UAE and GCC, most studies on incident reporting rely on theory-based frameworks or self-made questionnaires, but there isn't a common, validated tool to measure staff willingness to report. Other countries already use tested scales, but these are rarely adapted for Arabic or GCC settings. This makes it hard to compare findings across studies (Pfeiffer et al., 2013).

Many studies show that while healthcare staff often say they intend to report near misses, the number of actual reports is much lower. This gap between intention and real behavior needs more research to understand why it happens and how to close it, so that reporting systems truly capture safety issues (Toren et al., 2021; Idilbi et al., 2023). Most studies in the GCC that

measure willingness to report focus mainly on nurses, while doctors, pharmacists, and other non-clinical staff are rarely studied in the same way. Even when multiple professions are included, the tools used don't apply a single standard measure of willingness. This makes it hard to compare across roles and to understand profession-specific challenges (Almutary & Lewis, 2012).

Technology seems to make staff more willing to report incidents, as seen in UAE hospitals where electronic systems were linked with higher reporting. But we still don't know exactly why or which design features of these systems make the difference. Future research should test specific features like anonymous reporting, easy mobile use, or prompts that promote a fair culture, to see which ones truly lead to long-term improvements in reporting (Alalaween et al., 2024). In the UAE, only a few small studies exist, and they don't yet show clear patterns or link people's stated intentions to actual reports. Future research should focus on near-miss–specific willingness and compare it with real reporting data to get a clearer picture (Yang & Liu, 2021).

CHAPTER 3 – RESEARCH METHODOLOGY

In this chapter, we journey through the methodological heart of the study titled "Staff Perceptions and Attitudes on Incident Reporting and Its Management: A Study of Hospitals in the UAE." Here, I walk you through the philosophical underpinnings, research design, data collection, sampling strategy, and ethical safeguards that informed the study. This is where we move from ideas to action, illustrating how the research came to life.

3.1 Research Philosophy

To explore how staff perceive incident reporting, a pragmatic research philosophy. This approach centers on prioritizing practical outcomes and solutions which help in addressing real world problems. This study employs a mixed-methods design, integrating both quantitative (numerical/statistical) and qualitative (narrative) methodologies to provide a more comprehensive understanding of the research problem and to address research questions. A study conducted in African healthcare organizations related to the influencers of patient safety reporting, followed a pragmatic research philosophy, focusing on practical solutions to real-world challenges in patient safety incident reporting. It embraces both qualitative and quantitative evidence, recognizing the value of healthcare professionals' experiences as well as measurable patterns in reporting practices. By using a systematic integrative review, the study combines diverse methods to provide comprehensive and actionable insights. This approach emphasizes usefulness and applicability, aiming to inform strategies that improve reporting and enhance patient safety across African healthcare settings (Fekadu et al., 2025). Similarly, another study conducted in NHS, used the same research philosophy which emphasized actionable insights over strict adherence to a single theoretical perspective, making it well-suited to exploring complex, multifaceted healthcare systems like the NHS (Albreiki et al., 2024).

3.2 Research Design

This study employs a mixed-methods design, integrating both quantitative (numerical/statistical) and qualitative (narrative) methodologies to provide a more comprehensive understanding of the research problem and to gain a well-rounded understanding of staff perceptions and attitudes towards incident reporting within UAE healthcare settings. The choice of a mixed-methods design was intentional., aiming to capture not only the measurable patterns in behaviour and attitudes through surveys but also the deeper,

context-driven insights provided through interviews. The study by Fekadu & team employed a systematic integrative review design to comprehensively explore the obstacles and facilitators of patient safety adverse event reporting in acute healthcare settings in Africa. The integrative review approach was chosen because it allows inclusion of studies with diverse methodologies including quantitative (numbers), qualitative (personal stories), and a mix of both with participants representing a wide range of professional backgrounds (Fekadu et al., 2025).

A study explored culture of patient safety in a paediatric operating room using a mixed-methods approach. A survey of 144 attending physicians and trainees measured perceptions of safety, highlighting high ratings for individual competence but low scores for just culture and safety resources. Semi-structured interviews provided deeper insight, revealing that fear, lack of accountability, and preparedness challenges influenced these perceptions. By integrating quantitative and qualitative findings, the study pinpointed key areas to target for improving OR safety culture (Hebballi et al., 2024).

Another study explored clinical incident reporting among health professionals using a mixed-methods approach, combining surveys with 319 participants and interviews with 18 participants at Dessie Hospital. The quantitative data measured reporting behaviours and associated factors, while the qualitative insights helped explain why reporting rates were so low. Findings showed that training and awareness improved reporting, whereas “fear of legal consequences” and “lack of feedback” hindered it. By integrating both methods, the study provides a clearer, more personal understanding of the obstacles in fostering a culture of patient safety (Yalew and Yitayew, 2021)

3.2.1 Research Approach

We embraced an inductive approach—letting themes emerge from real voices on the ground rather than imposing preconceived frameworks.

3.2.2 Methodological Choice

The convergent mixed-methods model allowed simultaneous collection of survey and interview data. These methods converge in analysis, reinforcing findings through mutual cross-validation.

3.2.3 Research Strategy

Quantitative data was gathered via questionnaires, and qualitative insights were obtained through semi-structured interviews. This dual strategy ensures we capture both breadth and depth across multiple accredited hospitals in the UAE.

3.3 Research Aim and Objectives

Aim: To explore "staff perceptions and attitudes towards incident reporting" and identify organizational factors that influence reporting behavior in UAE hospitals.

Objectives

- To assess the perceptions and attitudes of clinical and non-clinical staff toward incident reporting using structured surveys across selected hospitals in the UAE.
- To identify and categorize the top five barriers to incident reporting through data analysis of survey responses and interviews conducted with hospital staff.
- To evaluate the impact of organizational culture and leadership on incident reporting behaviors by analyzing qualitative and quantitative data.
- To measure the effect of motivators, such as ethical responsibilities and organizational feedback, on reporting frequency by conducting a comparative analysis of survey results across different departments.
- To develop a comprehensive list of actionable strategies to improve incident reporting systems, supported by evidence from data analysis and stakeholder feedback, and present it to healthcare administrators.

3.4 Research Framework

Our investigative framework weaves together elements such as staff knowledge, attitudes shaped by culture and leadership, system usability, and feedback loops. This framework guided both the design of survey questions and the focus of interviews, ensuring direct alignment with the study's objectives.

3.5 Questionnaire Design

The survey blended Likert-scale questions and simpler, targeted queries to explore perceptions. It underwent expert review and piloting to ensure clarity, relevance, and cultural appropriateness (Rashed and Hamdan, 2019).

3.6 Data Collection Methods

To collect quantitative data, a structured cross-sectional survey was distributed among healthcare professionals working in accredited hospitals across the UAE. The sampling strategy for the survey relied on convenience sampling, a non-probability method particularly suitable for reaching participants in close-knit professional communities such as healthcare. Initial respondents were identified through professional networks and hospital contacts, and these individuals then helped identify further eligible participants. This approach was especially useful given the challenges of directly accessing healthcare staff due to time constraints, shift schedules, and administrative barriers. While convenience sampling does limit the ability to draw broader findings and conclusions to the entire population, it allowed for the collection of a sizable and relevant sample of 390 participants, capturing diverse roles, departments, and healthcare facilities (AbuMustafa & Jaber, M. 2019).

A study on students' view about artificial intelligence explored how university students view artificial intelligence, with participants recruited through convenience sampling. A total of 130 final-year students from three different faculties took part, sharing their ideas through a word association test. The findings showed that education students had a broader and richer understanding of AI, while students across all faculties tended to express more negative than positive views. The study suggests introducing AI-focused lectures to help students gain a clearer and more balanced perspective (Keles and Aydm, 2021).

While patient safety is seen as highly important across Europe, Poland has made limited progress in this area. Using convenience sampling, one study surveyed primary healthcare providers to learn which patient safety strategies they view as most critical and compared the results with other countries. Polish providers pointed to integrated medical records, patient-held records, reasonable workloads, and stronger IT support as top priorities. Yet, these measures remain underused, and the strategies valued in Poland differ notably from those highlighted in other nations (Kosiek et al., 2021).

For the qualitative strand, semi-structured interviews were undertaken to supplement the survey data with richer, more detailed narratives. Interview participants were selected using purposive sampling, a strategy that involves selecting individuals who are particularly knowledgeable or experienced in the topic being studied. This method ensured that insights were gathered from a diverse range of healthcare roles including clinical leaders, quality

managers, nurses, and frontline staff each of whom could offer informed perspectives on incident reporting practices within their organizations. A study explored how healthcare providers and managers in Tehran perceive patient participation in patient safety using purposive sampling. Through interviews with 31 professionals across three teaching hospitals, the study found that patients and families can play a valuable role in promoting safety. However, barriers exist at the patient, provider, and system levels that limit their involvement. The findings highlight the need for multifaceted strategies to encourage patient engagement and suggest further research to better understand and address these challenges in the Iranian healthcare context (Sarkhosh et al., 2022).

The combination of these two sampling techniques convenience sampling for broader outreach and purposive sampling for in-depth understanding was designed to ensure a balanced and comprehensive exploration of the topic. The dual approach not only enhanced the credibility of the research findings through data triangulation but also allowed to gain clearer insights into the multiple factors influencing incident reporting behaviours in healthcare environments.

I have collected responses from 390 participants including a good mix of doctors, nurses, allied healthcare providers and non-clinical staff. Surveys were distributed widely, and a selected group participated in interviews to enrich understanding with qualitative perspectives.

3.7 Sampling

To ensure the research addressed a wide variety of and meaningful range of perspectives from healthcare professionals across the UAE, a mix of convenience sampling and purposive sampling techniques was deployed. For the quantitative component, the study used convenience sampling to distribute structured surveys among clinical and non-clinical staff in accredited hospitals and healthcare organizations. Convenience sampling is a non-probability technique where initial participants recruit others from their professional networks, creating a chain of referrals. This method was particularly effective in the healthcare setting, where access to participants can be restricted due to time pressures, shift work, and organizational gatekeeping (Dyab et al., 2018; Hwang et al., 2012; Cohen, N., & Arieli, T. 2011). The initial group of respondents was identified through known contacts in hospitals, and from there, participation grew organically as respondents shared the survey with colleagues. While this technique does limit the ability to generalize findings to the entire population, it proved invaluable in reaching a wide cross-section of healthcare staff, especially within the tight-knit

and high-demand context of hospital environments. In total., 390 valid survey responses were collected, representing a diverse sample in terms of roles, departments, and experience levels. A minimum sample size of 384 was required appropriate for the cross sectional surveys for population of over 200,000 at 95% confidence level and 5% margin of error (Slovin's formula for Sample Size) (Ref: UAE health Sector, 2019, accessed on 15th Apr 2020; UAE Statistical Annual Report, 2020; Accessed on 10th Jan 2021).

For the narrative (qualitative) phase, purposive sampling was used to pick participants for semi-structured interviews. This method was chosen to deliberately include individuals with specific knowledge or experience related to incident reporting practices (Dhamanti, et al., 2022; Carlfjord et al., 2018; Kingston, et, al., 2004). Participants included healthcare staff / leaders from various professional backgrounds such as quality managers, head nurses, director of nursing, medical directors, administrators and heads of the departments. The goal was to gather detailed, firsthand insights from those directly involved in or affected by the reporting process. By focusing on participants with relevant expertise and varying perspectives, the study was able to build a rich understanding of both the cultural and operational dynamics that influence reporting behaviour.

Together, these two sampling strategies supported the mixed-methods design by enabling both breadth and depth in data collection. The convenience approach allowed the research to reach a wide and otherwise difficult-to-access participant base, while the purposive sampling ensured that key insights were drawn from individuals with the most relevant experiences and knowledge. This approach strengthened the credibility and practical relevance of the study's findings.

One study in South Korea examined perceptions of patient engagement in safety using a qualitative, mixed-methods (convenience & snowball sampling and purposive sampling) approach with three focus groups involving physicians, nurses, and patients in South Korea. Researchers analyzed transcripts and created a word cloud to highlight key themes. Findings showed that patient engagement begins with choosing a hospital but requires ongoing involvement through questioning, guardian cooperation, and safety education. Engagement often declines after safety incidents due to emotional and practical challenges. The study emphasizes the need to align perspectives across stakeholders to improve patient involvement in safety initiatives (Jang et al., 2023).

A mixed sampling methodology was used for the survey and semi-structured interviews. We used convenience sampling: initial respondents from our networks helped recruit further participants across hospitals. This approach particularly useful for reaching busy or hard-to-access groups, was adopted despite its limitations around generalizability and potential bias. A Convenience Sampling was used to get appropriate sample size for each of the types of staff. The study population will include all healthcare professionals (physicians, nurses, allied healthcare staff and non-clinical staff), working in an accredited hospital and healthcare organizations of UAE.

Justification of the convenience sampling methodology:

The quantitative component of this study employed a convenience sampling approach, which, while acknowledged to have inherent limitations in terms of statistical generalizability, is considered appropriate within healthcare research contexts where access to participants is constrained. Healthcare professionals typically operate within highly regulated environments, characterized by shift-based schedules, workload pressures, and institutional access controls, making probability-based sampling methods difficult to implement (Cohen & Arieli, 2011; Hwang et al., 2012). Consequently, convenience sampling has been widely adopted in patient safety and incident reporting studies to enable timely and feasible data collection without compromising the practical integrity of the research (Evans et al., 2006; Mitchell et al., 2016). Importantly, the adequacy of the sample in this study is strengthened by its broad representation across multiple hospital categories and professional groups. Participants were drawn from a diverse mix of healthcare settings, including public and private hospitals, tertiary and secondary care facilities, as well as specialized centers and clinics. This diversity enhances the heterogeneity of the sample and supports contextual representativeness across organizational types within the UAE healthcare system. Similar multi-site approaches have been recognized in the literature as effective strategies for improving external validity when probability sampling is not feasible (Alsafi et al., 2015; Alsobou et al., 2025).

Furthermore, the sample size (n = 390) exceeded the minimum requirement calculated using Slovin's formula (n = 384), indicating adequate statistical power for cross-sectional analysis. The inclusion of respondents from different emirates and across various professional roles (clinical, allied health, and administrative staff) further contributes to the robustness of the dataset and mitigates potential selection bias. In addition, the use of a mixed-methods design,

combining quantitative findings with purposively sampled qualitative insights, enables methodological triangulation, thereby enhancing the credibility and depth of the study findings (Braun & Clarke, 2006; Yalew & Yitayew, 2021).

While generalizability to the entire population of healthcare professionals should be interpreted with caution, the combination of sample diversity, adequate size, and triangulated methodology supports the overall methodological rigor of the study. Future research may benefit from employing stratified or probability-based sampling techniques to further strengthen generalizability across healthcare sectors.

3.8 Ethical Considerations

Although this study did not require formal ethical approval—given its open, non-invasive nature and the absence of patient or sensitive personal data—ethical responsibility remained a top priority throughout the research process. The research involved engaging healthcare professionals in conversations about their perceptions and experiences with incident reporting, which, while not sensitive in the traditional sense, still required thoughtful handling to ensure participants felt respected, safe, and informed.

3.8.1 Informed Consent

Before participating, all individuals were given a clear explanation of the study's purpose, what their involvement would entail, and how their responses would be used. For the survey, this information appeared at the beginning of the questionnaire, and participants provided their consent by agreeing to continue. For interviews, verbal consent was obtained after outlining the study procedures and responding to any questions raised by participants. At every stage, participants were made aware that their involvement was fully voluntary, and participants could stop whenever they wanted, without needing to provide a reason.

3.8.2 Privacy, Confidentiality, and Anonymity

Participants' privacy was carefully protected. The survey was designed to avoid collecting any identifying details, and interview responses were anonymized during transcription. Instead of using names or job titles, participants were assigned general identifiers (e.g., "Interviewee 3"), and any potentially revealing information was removed or modified. All data was stored securely on encrypted and password-protected devices, with access limited to the researcher alone.

3.8.3 Voluntary Participation and the Right to Withdraw

From the outset, participants were given assurance that their participation was completely up to their choice with no coercion. They had complete freedom to decline to participate, skip any question, or withdraw altogether even after the interview had started or the survey had been completed (as long as their data hadn't yet been anonymized). There were no incentives or pressures applied, just a genuine invitation to contribute to an academic exploration of a topic that affects them professionally.

3.8.4 Respecting Cultural and Professional Contexts

The study was conducted with full awareness of the UAE's rich cultural diversity and professional norms within healthcare. Care was taken to use respectful, inclusive language throughout the surveys and interviews. Where needed, clarifications were provided in simple English, and support was available for participants more comfortable with Arabic. This helped ensure that everyone felt understood and respected, regardless of their background.

3.8.5 Data Handling and Protection

Data security was treated seriously. All digital files such as completed surveys, transcripts, and notes were stored securely with encryption and password protection. Any physical documents were kept in locked storage. Data will be retained only for as long as required by university policy, after which it will be safely destroyed.

3.8.6 Minimal Risk and Participant Comfort

Because the study focused on staff experiences and opinions, not patients or clinical interventions and hence it carried very low risk. Still, participants were reminded that they could speak freely without concern for judgment or repercussions. The aim was always to create a safe, respectful environment where staff could share their honest thoughts about incident reporting in their organizations.

In summary, even without the need for formal ethical approval., every effort was made to ensure this study was conducted responsibly and with care. Participants were treated with respect, their contributions were valued, and their privacy was protected, principles that lie at the heart of any ethical research practice.

This chapter has laid the groundwork i.e., philosophical., practical., and ethical., for exploring healthcare staff attitudes toward incident reporting. We now stand poised to dive into the collected findings, delving into what the staff told us and what it all means.

3.9 Data Analysis

Data analysis was conducted in two sequential but integrated phases:

1. Quantitative Analysis – Based on survey responses from 390 healthcare professionals representing diverse roles, departments, and emirates. Data preparation included coding, cleaning, and screening for missing or inconsistent values. Descriptive statistics were first generated to profile respondents and summarize their reporting preferences. This was followed by Exploratory Factor Analysis (EFA) to identify the latent constructs influencing incident reporting, and Confirmatory Factor Analysis (CFA) to validate the measurement model. Relationships between variables were then tested using Partial Least Squares Structural Equation Modelling (PLS-SEM) to evaluate the seven hypotheses.
2. Qualitative Analysis – Conducted using transcripts from 30 semi-structured interviews with healthcare leaders and key informants. Data were analyzed using thematic analysis following Braun and Clarke's (2006) six-phase framework, enabling the identification of recurring themes, patterns, and narratives related to barriers, enablers, and best practices in incident reporting.

Software Tools Used:

- SPSS (Statistical Package for the Social Sciences) for data cleaning, descriptive statistics, and EFA.
- SmartPLS for CFA and PLS-SEM, allowing for robust testing of relationships between constructs in the conceptual framework.
- NVivo for coding and thematic analysis of qualitative data, facilitating systematic identification of patterns and triangulation with quantitative results.

This mixed analytical approach allows for both statistical rigor and contextual depth, ensuring that findings are not only numerically validated but also grounded in the lived experiences of healthcare staff.

CHAPTER 4 – RESULTS AND DISCUSSION

This chapter presents a comprehensive account of the data analysis techniques employed to investigate healthcare professionals' attitudes and behaviours toward incident reporting, and the organizational mechanisms that shape this critical safety practice. The overarching goal of this research was to assess how individual perceptions (such as fear of consequences, motivation, training, and perceived incident characteristics) and institutional factors (such as risk management systems, leadership support, and procedural mechanisms) interact to influence staff willingness to report incidents. The research adopted a sequential explanatory mixed-methods design, wherein quantitative data analysis served as the foundation for model development, which was later supported and contextualized through qualitative insights from key healthcare leaders.

In the quantitative phase, data were collected through a structured cross-sectional survey administered to clinical and non-clinical staff working in hospitals across the UAE. The survey questionnaire / instrument was adopted and developed based on an extensive literature review and expert feedback, and it included both demographic items and Likert-scale questions designed to capture respondents' attitudes, perceptions, and experiences with incident reporting. The sampling strategy combined convenience and purposive sampling techniques to ensure broad participation across different professional categories (e.g., doctors, nurses, allied health professionals, and administrative staff) (Rashed and Hamdan, 2019).

The analysis commenced with descriptive statistics to summarize the respondents' profile and provide preliminary insights into their awareness and engagement with incident reporting practices. This was followed by Exploratory Factor Analysis (EFA) to identify the key factor structure of the survey items and identify key latent constructs such as "fear of reporting barriers," "motivating factors," "training and awareness," and "organizational support." Once a stable factor structure was established, Confirmatory Factor Analysis (CFA) was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS to validate the measurement model, confirm construct reliability and validity, and ensure a good fit of the proposed factor structure. Subsequently, Structural Equation Modelling (SEM) was employed to test the hypothesized relationships among constructs, including direct and moderating effects. Moderation analysis was carried out by constructing interaction terms to examine whether variables such as "organizational risk management policies", "leadership support",

and “reporting procedures” strengthened or weakened the influence of individual-level predictors on willingness to report.

In the second phase, a qualitative analysis was deployed to complement and enrich the quantitative findings. This phase involved semi-structured interviews with healthcare leaders, including department heads, quality officers, and senior administrators, selected through purposive sampling. The purpose of this qualitative inquiry was to explore institutional strategies for managing incident reports, identify operational challenges, and highlight contextual enablers of a reporting-friendly culture. The interviews were transcribed and analyzed using thematic analysis, following the procedures outlined by Braun and Clarke (2006), which allowed for the extraction of patterns and themes related to best practices, reporting barriers, and leadership roles in shaping safety climates. The qualitative insights not only confirmed the quantitative results but also provided practical guidance for refining the proposed model.

Together, the findings from both quantitative and qualitative strands informed the design of a comprehensive model for effective incident report management, aimed at improving patient safety, decreasing adverse events, and enhancing organizational learning. The integrated approach used in this chapter ensures that the analysis is both statistically robust and contextually grounded.

4.1 Quantitative Data Analysis

4.2 Descriptive Analysis

Table 1. Educational Qualifications

Educational Qualification	Frequency	Percent (%)
Diploma	26	6.7
Bachelor’s Degree	186	47.7
Master’s/Postgraduate	178	45.6
Total	390	100.0

The distribution of educational qualifications among the respondents shows that the workforce is highly educated, with 47.7% holding a Bachelor’s degree and 45.6% possessing a Master’s or postgraduate qualification. Only 6.7% of the respondents hold a Diploma-level education. This indicates a relatively advanced level of academic preparation among healthcare professionals in the UAE. The high percentage of postgraduate qualifications may reflect

strong institutional requirements, especially in clinical and administrative leadership roles. It also suggests that the participants are likely to possess the cognitive and professional capabilities required to understand and engage with structured processes such as incident reporting, potentially influencing both awareness and willingness to report safety-related events.

Table 2. Type of Healthcare Organization (HCO)

Type of HCO	Frequency	Percent (%)
Hospital	281	72.1
Day Care Surgery Centre	58	14.9
Clinics / Medical Centre	48	12.3
Laboratory	2	0.5
Occupational Health	1	0.3
Total	390	100.0

A significant majority of respondents (72.1%) were employed in hospital settings, which are often characterized by complex workflows, multidisciplinary teams, and high patient acuity. This is followed by 14.9% in day care surgery centres and 12.3% in clinics or medical centres, while laboratories and occupational health units make up less than 1% each. This distribution highlights that the findings are primarily shaped by experiences within hospitals, where incident reporting systems tend to be more formalized and integrated into clinical governance structures. The predominance of hospital-based responses is crucial as it aligns well with the study's focus on improving incident report systems in institutional care environments.

Table 3. Emirates

Emirate	**Frequency**	**Percent (%)**
Dubai	102	26.2
Abu Dhabi	88	22.6
Sharjah	62	15.9
Ajman	46	11.8
RAK	41	10.5
Fujairah	32	8.2
Um Al Quwain	19	4.9
Total	390	100.0

Respondents were drawn from across the UAE, with the largest representation from Dubai (26.2%), Abu Dhabi (22.6%), and Sharjah (15.9%), reflecting the geographic spread of healthcare institutions in more urbanized emirates. Smaller percentages came from Ajman, Ras Al Khaimah (RAK), Fujairah, and Um Al Quwain, collectively representing a more diverse provincial input. This emirate-level distribution enhances the generalizability of the findings across the UAE healthcare landscape. It also suggests that while the majority of insights are drawn from metropolitan centres, perspectives from smaller emirates—which may differ in terms of resource availability, policy enforcement, or staff capacity—are not neglected.

Table 4. Gender

Gender	Frequency	Percent (%)
Woman	193	49.5
Man	167	42.8
Prefer not to say	30	7.7
Total	390	100.0

The gender distribution shows a near balance, with 49.5% identifying as female gender and 42.8% as male gender, while 7.7% preferred not to reveal which gender they belong to. This aligns with the gender composition typically seen in healthcare sectors, especially in nursing and allied health roles which often have higher female representation. The presence of both male and female voices adds gender diversity to the data interpretation and could be relevant for examining differential attitudes toward incident reporting, especially in hierarchical or culturally sensitive environments where gender roles may influence openness or reporting behaviour.

Table 5. Professional Position

Professional Position	Frequency	Percent (%)
Nurses & HCA	101	25.9
Doctors	97	24.9
Non-Clinical Staff	96	24.6
Allied Medical Staff	66	16.9
Laboratory and Radiology Technicians	30	7.7
Total	390	100.0

The distribution of professional roles shows a diverse workforce, with Nurses and Healthcare Assistants (HCA) making up the largest group (25.9%), closely followed by doctors (24.9%)

and Non-Clinical Staff (24.6%). Allied medical staff (e.g., dietitians, physiotherapists) represent 16.9%, and laboratory/radiology technicians make up 7.7%. This variety ensures that the analysis captures the perspectives of both "clinical and non-clinical staff" involved in incident reporting. Importantly, the relatively high proportion of non-clinical respondents indicates recognition that safety events are not limited to direct patient care, thus reinforcing the need for cross-functional engagement in incident management systems.

Table 6. Years of Experience in Current HCO

Experience	Frequency	Percent (%)
2–5 years	103	26.4
5–10 years	87	22.3
1–2 years	84	21.5
More than 10 years	70	17.9
0–12 months	46	11.8
Total	390	100.0

A diverse range of work experience is evident among participants. The largest segment (26.4%) had 2–5 years of experience, followed by 22.3% with 5–10 years, and 21.5% with 1–2 years. A notable 17.9% had over 10 years of experience, while 11.8% were relatively new (0–12 months). This indicates that both seasoned professionals and newer employees contributed to the data. Experience in the organization can shape familiarity with policies, comfort with speaking up, and perceived accountability—making this distribution critical to interpreting attitudes toward incident reporting. Long-tenured staff may possess deeper system knowledge but also more entrenched perceptions, while newer staff may face onboarding and psychological safety challenges.

Table 7. Primary Work Area in the Hospital

Primary Work Area in the Hospital	Frequency	Percent (%)
Administration, Reception, Medical Records, Engineering, Kitchen, Housekeeping, Safety Officer	92	23.6
Inpatient Wards, Intensive Care Units, Labor Room, Operation Theatre, Emergency	124	31.8
Outpatient Clinics, Dermatologist, Lactation Consultant	55	14.1

Chemotherapy / Radiation therapy (Oncology), Dialysis, Physio, Physiotherapist, Physiotherapy, Psychologist	56	14.4
Dietitian, Dietetics, Nutritionist, Radiology, Laboratory, Pharmacy	78	20.0
Infection Control, Quality, Quality & Excellence Department, Quality Patient Safety, Quality and Patient Safely, Nurse Manager	11	2.8
Beauty Therapist, Biomedical Engineering	2	0.5
Total	390	100.0

The respondents' primary work areas reflect the operational breadth of healthcare delivery. Inpatient services (including ICU, wards, emergency, labour room, and OT) were most represented (31.8%), followed by administrative and support roles (23.6%), and allied diagnostic and therapeutic units such as radiology, pharmacy, and laboratory (20%). Outpatient and specialty services (e.g., dialysis, physiotherapy, oncology) together account for a substantial portion. This distribution affirms that incident reporting is relevant across various departments. It also underscores that interventions aimed at improving reporting systems must be tailored not just to clinical areas but also to support functions that are integral to patient safety, such as housekeeping, medical records, and engineering.

Table 8. Preferred Person to Report Errors

Preferred Person to Report Errors	Frequency	Percent (%)
Quality Dept (Incident Reporting system)	316	81.0
Charge Nurses, Head of unit, Nurse manager, Head of unit, quality and involved teams	28	7.2
Colleague/peer	8	2.1
Hospital administration	29	7.4
Independent agency outside the hospital (e.g., MOH, Pharmacovigilance, DHA, DOH), Independent third party	8	2.1
Multidisciplinary committee	1	0.3
Total	390	100.0

An overwhelming 81.0% of respondents preferred to report errors to the Quality Department or Incident Reporting System, indicating strong institutional trust in centralized reporting

mechanisms. Supervisors and unit managers were preferred by 7.2%, and hospital administration by 7.4%, while peers and external entities such as regulatory bodies were chosen by only a small fraction. This preference for formal., structured reporting channels suggests that healthcare staff recognize the importance of accountability and documentation. However, it also raises questions about the perceived accessibility or psychological safety associated with informal or peer-level reporting. This reinforces the importance of maintaining a transparent and non-punitive centralized system supported by effective feedback loops.

Implications for Current Research

The fact that most staff (81%) prefer to report to the Quality Department or main Incident Reporting System shows that they trust formal systems more than informal ways. This agrees with past studies that found staff believe official systems are safer and more reliable (Kingston et al., 2004; Pfeiffer et al., 2010). For researchers, this means future studies should look at how to make these central systems stronger and easier to use.

The low number of staff who report to supervisors, peers, or outside bodies shows that many people still worry about blame or losing trust in their teams. Other studies also found that fear and lack of psychological safety stop staff from reporting at the unit level (Lawton & Parker, 2002; Kohn et al., 2000). Future research should focus on building open, blame-free cultures where staff feel safe to speak up.

This also shows that "giving feedback" is very important. If staff report but never hear what happened, they may stop reporting over time (Evans et al., 2006; Pham et al., 2013). Researchers should test how fast and clear feedback can improve staff confidence in reporting.

Finally, in places like the Middle East and GCC, even though hospitals have central systems, under-reporting is still a big problem (Alboliteeh et al., 2017; Elmontsri et al., 2017). This means future studies in this region should look at how cultural factors and local leadership styles affect reporting, and how to design systems that work best in this setting.

4.2.1 Comparative Interpretation with Global Benchmarks and Rationale for Subgroup Analysis:

The findings from the descriptive analysis should be interpreted in the context of global evidence on incident reporting systems. International literature consistently demonstrates that

incident reporting data do not reflect the true incidence of patient safety events but rather the maturity of reporting culture within organizations. A systematic review comparing incident reporting systems with structured detection methods such as the Global Trigger Tool found that only a small proportion of adverse events—often less than 10%—are captured through reporting systems. This suggests that higher or lower reporting rates should not be interpreted as direct indicators of safety performance, but rather as reflections of staff engagement, psychological safety, and system usability (Hibbert et al., 2023).

In well-established health systems such as the United Kingdom's National Health Service (NHS), incident reporting rates have been shown to correlate positively with safety culture rather than with adverse outcomes. Hospitals with higher reporting rates often demonstrate stronger organizational learning, better staff engagement, and more mature risk management practices. This aligns with the current study's finding that a majority of respondents (81%) prefer formal reporting through Quality Departments, indicating trust in institutional systems and recognition of structured governance mechanisms (Gampetro et al., 2024).

At the same time, international comparisons highlight that reporting behaviour varies significantly across healthcare systems due to differences in medico-legal environments, organizational culture, and professional norms. For example, studies comparing the United States and United Kingdom have shown that fear of litigation, blame, and professional consequences remains a major determinant of reporting behaviour, though the nature and intensity of these concerns differ across contexts. These findings reinforce the importance of contextualizing results within regional and cultural settings, particularly in the Middle East and GCC, where hierarchical structures and cultural norms may influence openness and reporting practices (Augustine, 2024).

Furthermore, global guidance from the World Health Organization emphasizes that incident reporting systems are primarily designed as learning tools to identify patterns, contributing factors, and system weaknesses, rather than as surveillance tools to measure safety outcomes. This perspective supports the interpretation of the current findings, particularly the strong reliance on centralized reporting systems, as an indicator of institutional learning orientation rather than incident prevalence (Howell et al., 2015).

In addition to global benchmarking, the diverse distribution of professional categories in this study highlights the importance of subgroup analysis. Existing research demonstrates that incident reporting behaviours differ significantly across professional groups. For instance, clinicians are more likely to report severe harm events, whereas nurses and allied health professionals are influenced more strongly by factors such as training, fear of blame, and organizational culture. Similarly, studies focusing on nursing staff have identified fear of repercussions, lack of feedback, and insufficient training as key barriers to reporting (Hewitt et al., 2016; Pascual et al., 2024). Methodologically, subgroup analysis is essential in healthcare research because aggregate findings may obscure meaningful variation across groups. Subgroup analysis enables the identification of differential behaviours, barriers, and facilitators among professional categories, thereby allowing for more targeted and effective interventions. In the context of incident reporting, such analysis is particularly important because reporting is a behaviour influenced by role-specific responsibilities, hierarchical dynamics, and exposure to patient care risks.

Therefore, the inclusion of multiple professional categories in this study—ranging from doctors and nurses to non-clinical staff—represents a significant strength. It allows for a more comprehensive understanding of incident reporting behaviour across the healthcare system and provides a foundation for future subgroup-level analyses that can inform tailored interventions for different workforce segments.

4.3 Exploratory Factor analysis

Exploratory Factor Analysis (EFA) was conducted on the Likert-scale items related to perceptions, fears, and motivations toward incident reporting to uncover the underlying factor structure. Using principal axis factoring with Varimax rotation, the analysis revealed a clear and interpretable set of latent constructs. Items clustered into distinct factors representing themes such as fear of punitive consequences, organizational support for reporting, system-related barriers, and perceived benefits of reporting. The Kaiser-Meyer-Olkin (KMO) measure confirmed sampling adequacy, and Bartlett's test of sphericity was significant, indicating suitability for factor analysis. These results suggest that healthcare staff perceptions on incident reporting are multidimensional., and the extracted factors provide a valid basis for understanding the psychological and organizational influences shaping reporting behaviour in hospital settings.

Table 9. Communalities Table

Communalities	Initial	Extraction
There is a formal incident reporting system at the hospital	1	0.789
Lack of clear definition of incident / event / error that may occur	1	0.751
Lack of feedback about incident / event / error	1	0.778
Staff feels like their mistakes are held against them	1	0.868
Staff worry that mistakes they make are kept in their personal file	1	0.860
Reporting is a method which is used to pinpoint blame	1	0.851
No atmosphere of trust in the unit / hospital	1	0.296
High level workload is common in this unit	1	0.380
We have enough staff to handle workload	1	0.360
We work in crisis mode trying to do too much too quickly	1	0.278
Reporting incident is not part of my job	1	0.775
I am unsure whose responsibility it is to report errors	1	0.739
Reporting (an incident) takes long time to complete	1	0.843
No perceived benefits of reporting incidents (learning from error)	1	0.867
Reporting incidents let everyone know that we have made a mistake	1	0.798
Most serious errors don't happen around here	1	0.372
Near miss (those errors intercepted and prevented before happening or reaching the patient) should not be reported	1	0.708
My supervisor seriously considers staff suggestions to improve patient safety	1	0.673
Staff feel free to question the decisions of those with high authority	1	0.765
Manager /supervisor protect reporters of error from negative consequences	1	0.718
Hospital Risk Management policy encourages non-punitive or blame free culture	1	0.792
We are informed about errors that happen in the unit	1	0.787
Fear of administrative sanctions (loss of job, transfer, prevent promotion)	1	0.802

Fear of lawsuits (legal and financial penalties)	1	0.754
Fear that owns competence may be questioned	1	0.919
Fear of loss of respect of colleagues	1	0.863
Fear of loss of personal reputation for being the whistle blower	1	0.801
Fear of loss of trust from patients or their families	1	0.821
Fear of press and the issue becoming public leading to loss of organizational reputation	1	0.774
Fear of loss of patients	1	0.796
Reporting incidents gets immediate help to patients	1	0.651
Reporting helps in learning from incidents or errors	1	0.835
Reporting is needed because it is ethical and professional responsibility to report incidents	1	0.766
I report because we improve our processes and system after incident report analysis	1	0.763
Reporting incidents have minimized repetition of errors	1	0.739
Our risk management policy encourages us to be part of the incident report analysis after reporting	1	0.695
We are involved in incident report analysis and identification of corrective actions	1	0.871
Incident analysis is focused on systems and processes rather than individuals	1	0.900
Our risk management policy protects us from punitive action after reporting	1	0.726
We are appreciated or rewarded for generating incident reports	1	0.794

Principal Component Analysis was deployed to perform Exploratory Factor Analysis (EFA) to assess the underlying structure of healthcare staff perceptions and attitudes toward incident reporting. The communalities extracted indicate that most items showed strong shared variance with the underlying factors, with values exceeding the commonly accepted threshold of 0.50. Notably, items related to fear of punitive action, ethical responsibility, supervisor support, and perceived benefits of reporting exhibited high communalities (e.g., 0.919 for fear of competence being questioned, 0.867 for learning benefits, and 0.871 for involvement in corrective actions), suggesting they are strongly represented by the derived factors. A few items

such as “no atmosphere of trust,” “crisis mode,” and “staffing sufficiency” had lower communalities (e.g., 0.296, 0.278, and 0.36 respectively), indicating these variables may not align well with the dominant constructs extracted. Overall, the EFA results support the construct validity of the scale, confirming that the instrument effectively captures multiple dimensions related to the incident reporting environment in hospitals.

Implications for Current Research

The EFA findings confirm that incident reporting attitudes in healthcare are multidimensional, with strong communalities for items such as fear of punitive action, ethical responsibility, supervisor support, and perceived benefits of reporting. This supports prior research which highlights that both individual-level concerns (fear, ethics) and organizational-level supports (leadership, feedback) play key roles in shaping reporting behaviors (Lawton & Parker, 2002; Kingston et al., 2004; Leape, 2005; Wagner et al., 2020). Future research should build on these results by developing interventions that directly address punitive fears while strengthening ethical responsibility and managerial support.

The high communalities for “learning benefits and involvement in corrective actions” reflect existing evidence that staff are more motivated to report when they see tangible organizational learning and safety improvements (Evans et al., 2006; Pham et al., 2013; Nieva & Sorra, 2003; Waring, 2005). Researchers should therefore further examine how timely feedback loops and visible system changes encourage continuous participation in reporting.

By contrast, items with lower communalities such as trust atmosphere, crisis mode, and staffing sufficiency indicate that these aspects, while important to safety culture, may not be central to staff perceptions of incident reporting in the present model. This aligns with studies suggesting that workload and trust issues often influence general safety climate but may operate as indirect barriers to reporting rather than as core determinants (Singer et al., 2009; Vogus & Sutcliffe, 2007; Chiang et al., 2011; Howell et al., 2015). Future studies could explore whether these variables act as moderators, shaping the strength of other reporting-related factors.

Overall, the strong factor structure demonstrated here adds to the construct validity of incident reporting measurement tools. It also underscores the need for more cross-cultural validation, especially in under-studied regions like the Middle East and GCC, where staff perceptions may be influenced by local cultural and organizational norms (Alboliteeh et al., 2017; Elmontsri et al., 2017; El-Jardali et al., 2010).

Table 10. Total Variance Explained (After Varimax Rotation)

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	6.86	17.14	17.14
2	5.09	12.72	29.86
3	4.79	11.98	41.84
4	3.28	8.21	50.05
5	3.12	7.81	57.87
6	2.31	5.79	63.65
7	2.12	5.31	68.96
8	1.73	4.33	73.29

The rotated component matrix using Varimax rotation yielded an eight-factor solution that cumulatively explained 73.29% of the total variance, confirming a robust and multidimensional structure. Component 1: Fear of Reporting Barriers accounted for the largest share with 17.14% of the variance, capturing staff concerns related to punitive consequences, loss of reputation, and blame culture. Component 2: Quality Department Procedures contributed 12.72%, reflecting the systems, tools, and protocols used by quality teams in managing incident reports. Component 3: Motivation to Report Incidents explained 11.98%, emphasizing ethical responsibility, learning from errors, and system improvement. Component 4: Incident Characteristics accounted for 8.21%, representing perceptions of the frequency, severity, and nature of incidents encountered. Component 5: Willingness to Report explained 7.81%, reflecting the individual's personal intention and readiness to report events. Component 6: Leadership and Supervisor Support captured 5.79%, highlighting the perceived role of supervisors in encouraging a blame-free and responsive culture. Component 7: Organizational Risk Management Support explained 5.31%, encompassing protective policies and staff involvement in post-incident analysis. Lastly, Component 8: Training and Awareness accounted for 4.33%, reflecting staff exposure to educational programs and awareness of incident reporting systems. This clearly defined factor structure affirms the construct validity of the instrument and provides strong empirical support for its use in studying incident reporting behaviours in healthcare settings.

Implications for Current Research

The eight main factors found in this study show that staff views on incident reporting are complex and have many sides. The biggest factor was fear of reporting barriers, meaning staff often worry about punishment, losing respect, or being blamed. Other studies have also shown that fear is one of the strongest reasons people avoid reporting (Lawton & Parker, 2002; Waring, 2005). Future research should look at how hospitals can create a *just culture* where staff feel comfortable and safe to report without blame (Dekker, 2012).

The factor of "Quality Department Procedures" shows that clear systems, tools, and rules help staff to report. Past research proves that when hospitals use simple and structured reporting systems, staff are more likely to use them (Evans et al., 2006; Pfeiffer et al., 2010). Future studies should test how digital tools and quick feedback can make reporting even easier.

"Motivation and willingness to report" highlight that many staff report because they feel it is their duty and they want the system to improve. Other studies confirm that when people believe reporting leads to learning and real change, they are more motivated to report (Kingston et al., 2004). Future research should look at ways to encourage this motivation, such as giving recognition or showing results from reports.

The role of "incident characteristics" shows that staff decide to report based on how serious or common the event is. Past work has shown that serious or unusual events are reported more often than small or routine mistakes (Pham et al., 2013). Future studies should focus on how training can help staff also report near misses and smaller errors that still give important lessons.

"Leadership, supervisor support, and risk management policies" are also very important. When leaders listen, support staff, and protect them from blame, reporting goes up (Singer et al., 2003; Wagner et al., 2019). Future research should look at how leadership walk rounds, feedback sessions, and clear policies make staff feel safer to report.

Finally, "training and awareness" show that education helps staff understand what and how to report. Previous studies prove that training programs and awareness campaigns increase reporting (Nieva & Sorra, 2003). Future studies should test how often this training should be repeated and how well it works in different cultures.

Overall, this study confirms that the tool is reliable and useful for studying incident reporting. It also shows that more research is needed in the Middle East and GCC, where culture and hierarchy may strongly influence reporting behaviors (El-Jardali et al., 2010; Alboliteeh et al., 2017; Elmontsri et al., 2017).

Table 11. Rotated component matrix

Variables	Component							
	1	2	3	4	5	6	7	8
Fear that owns competence may be questioned	0.910							
Fear of loss of respect of colleagues	0.879							
Fear of loss of trust from patients or their families	0.871							
Fear of loss of personal reputation for being the whistle blower	0.852							
Fear of loss of patients	0.851							
Fear of press and the issue becoming public leading to loss of organizational reputation	0.832							
Fear of administrative sanctions (loss of job, transfer, prevent promotion)	0.821							
Fear of lawsuits (legal and financial penalties)	0.809							
Incident analysis is focused on systems and processes rather than individuals		0.851						
Staff worry that mistakes they make are kept in their personal file		0.845						
Staff feels like their mistakes are held against them		0.845						
We are involved in incident report analysis and identification of corrective actions		0.823						
Reporting is a method which is used to pinpoint blame		0.792						

We have enough staff to handle workload								
No atmosphere of trust in the unit / hospital								
Most serious errors don't happen around here								
Reporting helps in learning from incidents or errors			0.853					
Reporting is needed because it is ethical and professional responsibility to report incidents			0.828					
I report because we improve our processes and system after incident report analysis			0.826					
Reporting incidents have minimized repetition of errors			0.779					
Reporting incidents gets immediate help to patients			0.737					
We are appreciated or rewarded for generating incident reports			0.734					
Reporting (an incident) takes long time to complete				0.904				
There is a formal incident reporting system at the hospital				0.862				
Lack of clear definition of incident / event / error that may occur				0.852				
Near miss (those errors intercepted and prevented before happening or reaching the patient) should not be reported				0.733				
No perceived benefits of reporting incidents (learning from error)					0.879			
Reporting incidents let everyone know that we have made a mistake					0.857			
Reporting incident is not part of my job					0.778			

I am unsure whose responsibility it is to report errors					0.709			
Staff feel free to question the decisions of those with high authority						0.732		
Manager /supervisor protect reporters of error from negative consequences						0.712		
My supervisor seriously considers staff suggestions to improve patient safety						0.686		
High level workload is common in this unit								
Hospital Risk Management policy encourages non-punitive or blame free culture							0.880	
Our risk management policy protects us from punitive action after reporting							0.775	
Our risk management policy encourages us to be part of the incident report analysis after reporting							0.736	
Lack of feedback about incident / event / error								0.805
We are informed about errors that happen in the unit								0.747
We work in crisis mode trying to do too much too quickly								

Principal Component Analysis with Varimax rotation extracted eight meaningful factors, cumulatively explaining a substantial proportion of the variance in staff perceptions of incident reporting. Component 1: Fear of Reporting Consequences (e.g., fear of losing job, respect, or trust) showed strong loadings ranging from 0.809 to 0.910, indicating a highly cohesive latent construct related to personal and professional risk. Component 2: Blame-Oriented Organizational Culture included items such as fear of being held accountable, lack of system-based analysis, and perceived punishment for reporting, with loadings from 0.792 to 0.851. Component 3: Motivation to Report Incidents reflected ethical responsibility, system improvement, and learning, with loadings between 0.734 and 0.853. Component 4: Structural Barriers to Reporting captured practical issues such as unclear definitions, reporting delays, and the availability or absence of reporting systems, with high loadings (e.g., 0.904, 0.862). Component 5: Perceived Futility of Reporting captured scepticism about the outcomes of reporting (e.g., "no perceived benefits"), with loadings from 0.709 to 0.879. Component 6: Supervisor Support and Empowerment reflected managerial responsiveness and openness, with loadings between 0.686 and 0.732. Component 7: Risk Management Culture included protections from punitive action and involvement in analysis, loading between 0.736 and 0.880. Component 8: Organizational Communication consisted of feedback and information sharing post-incident, with loadings of 0.747 and 0.805. Several items, such as those related to workload and trust atmosphere, were removed due to low or cross-loadings, enhancing the model's clarity and construct reliability. Overall, the factor structure affirms the multidimensional nature of staff attitudes toward incident reporting and supports the validity of the refined measurement instrument.

Implications for Current Research

The extraction of eight distinct factors highlights the complex and multidimensional nature of staff perceptions toward incident reporting. "Fear of reporting consequences and blame-oriented culture" reaffirm earlier findings that punitive environments reduce reporting behavior (Kohn, Corrigan, & Donaldson, 2000; Lawton & Parker, 2002). This suggests that future research should continue to focus on strategies that strengthen *just culture* frameworks and psychological safety in healthcare organizations (Dekker, 2012).

The emergence of "motivation to report" as a separate factor underlines the role of professional ethics and system-learning orientation, supporting evidence that intrinsic motivation and

perceived impact are critical drivers of reporting behavior (Kingston et al., 2004; Pfeiffer et al., 2010). Researchers should further explore interventions that foster moral responsibility and highlight organizational learning from incident reports.

"Structural barriers to reporting" (e.g., unclear definitions, delays, lack of systems) echo gaps reported in prior studies from both high-income and low-middle-income countries (Evans et al., 2006; Hutchinson et al., 2009). This indicates the need for comparative cross-system research on how digital tools, simplified workflows, and integration into clinical routines can mitigate such barriers.

The factor of "perceived futility of reporting" strengthens existing evidence that staff disengage when they believe reports lead to no change (Evans et al., 2006; Pham et al., 2013). Future studies should investigate the role of timely feedback and visible action in building trust and sustained participation.

Finally, the identification of "supervisor support, risk management culture, and organizational communication" aligns with research that emphasizes leadership responsiveness and open communication as essential for building a safety culture (Singer et al., 2009; Vogus & Sutcliffe, 2007). This underscores the need for leadership development programs and multi-level communication strategies in healthcare safety research.

Overall, the factor structure validated here enriches the existing literature by offering a refined measurement instrument that can be applied in diverse healthcare settings. It provides a foundation for future interventional and cross-cultural studies, especially in under-researched regions such as the Middle East and GCC, where empirical evidence on incident reporting behaviors remains limited (Alboliteeh et al., 2017; Elmontsri et al., 2017).

4.4 Confirmatory Factor Analysis

Following the identification of an eight-factor structure through Exploratory Factor Analysis, a Confirmatory Factor Analysis (CFA) was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS software. This approach was picked due to its suitability for complex predictive models, its ability to handle non-normal data, and its effectiveness with moderate sample sizes, all of which aligned with the objectives and conditions of this study. Unlike covariance-based SEM techniques that rely heavily on global model fit indices such as RMSEA, CFI, and Chi-square, the PLS-SEM approach focuses on

maximizing the explained variance in endogenous constructs and emphasizes the evaluation of the measurement model through a set of reliability and validity indicators.

The primary goal of this CFA was to assess whether the observed indicators reliably and validly measured the hypothesized latent constructs related to incident reporting attitudes and behaviours among healthcare staff. To evaluate the measurement model, several key criteria were examined. First, indicator reliability was assessed by examining the standardized outer loadings of each item on its respective latent construct. All items were expected to load at 0.70 or higher to be retained, indicating that each observed variable strongly reflected its corresponding factor. Items falling below the threshold were critically reviewed and, in some cases, removed to enhance the overall model quality.

Second, internal consistency reliability was evaluated using both Cronbach's alpha and composite reliability (CR). While Cronbach's alpha is a traditional measure of reliability, composite reliability is considered more appropriate in PLS-SEM as it accounts for the actual outer loadings of the indicators. CR values exceeding 0.70 were considered acceptable, indicating that the construct items consistently measured the intended latent variables. Third, convergent validity was assessed by calculating the Average Variance Extracted (AVE), with a threshold of 0.50. This ensured that each construct explained at least half of the variance in its indicators.

To establish discriminant validity, the Fornell-Larcker criterion was applied, requiring that the square root of each construct's AVE be greater than its highest correlation with any other construct. Additionally, the Heterotrait-Monotrait (HTMT) ratio of correlations was computed as a more stringent test of discriminant validity. HTMT values below 0.85 were considered indicative of sufficient discriminant validity. Together, these analyses confirmed that the eight-factor structure of the measurement model demonstrated robust psychometric properties.

The constructs confirmed through this CFA included fear of reporting consequences, blame-oriented culture, motivation to report, structural barriers, perceived futility of reporting, supervisor support, risk management culture, and organizational communication. The validation of this measurement model ensures that these dimensions are empirically distinct and reliably captured, thereby providing a strong foundation for subsequent structural analysis and hypothesis testing related to incident reporting practices in healthcare organizations.

Table 12. Convergent Reliability & Validity

Constructs	Cronbach's alpha	Composite reliability (rhoa)	Composite reliability (rhoc)	Average variance extracted (AVE)
Factors motivating to report incidents	0.922	0.970	0.938	0.716
Fear of reporting barriers	0.973	0.975	0.977	0.839
Incident characteristics	0.884	1.187	0.903	0.700
Leadership/supervisor support	0.840	1.024	0.896	0.742
Organizational risk management	0.775	0.776	0.869	0.689
Procedures/techniques used by Quality Dept staff for incident report management	0.971	0.978	0.978	0.897
Staff's willingness to report incidents	0.886	0.897	0.921	0.747
Training and awareness on incidents and reporting	0.827	0.834	0.920	0.852

The results of the convergent reliability and validity assessment indicate that the measurement model demonstrates strong psychometric properties. As proposed by Hair et al. (2019), all constructs show Cronbach's alpha values well above the acceptable threshold of 0.70, confirming internal consistency. For example, "Fear of reporting barriers" has a Cronbach's alpha of 0.973, and "Motivation to report incidents" shows a value of 0.922, both reflecting high reliability. Composite reliability (CR) values for all constructs exceed 0.70 (ranging from 0.869 to 0.978), meeting the criterion for internal consistency reliability (Hair et al., 2019; Henseler et al., 2015). Additionally, the Average Variance Extracted (AVE) values for all constructs exceed 0.50, establishing convergent validity (Fornell & Larcker, 1981). Notably, constructs such as "Procedures used by Quality Dept staff" and "Training and awareness" demonstrate particularly high AVEs (0.897 and 0.852 respectively), indicating that a substantial proportion of variance in their indicators is captured by the constructs. These results confirm that the observed indicators meaningfully and reliably reflect their intended latent variables, supporting the measurement model's validity in the context of incident reporting in healthcare settings. Based on the measurement model figure, all items exhibit strong and statistically significant outer loadings, with values well above the recommended threshold of 0.70 (Hair et al., 2019), indicating excellent indicator reliability. For example, item loadings

for “Fear of reporting barriers” range from 0.882 to 0.956, while those for “Staff’s willingness to report incidents” range from 0.794 to 0.937, confirming that each observed item strongly reflects its respective latent construct (see Figure 1).

Implications for Current Research

The results show that this tool is reliable and valid for studying how staff feel about reporting incidents. The high Cronbach’s alpha and composite reliability values mean that the questions used in the survey are consistent and trustworthy (Hair et al., 2019; Henseler et al., 2015). This gives confidence that the tool can be used again with other groups of staff and still give stable results.

The high Average Variance Extracted (AVE) values prove that each factor really measures what it is supposed to measure. This is important because in patient safety, things like *training* or *quality procedures* are hard to measure. Past studies have shown that many safety culture surveys struggle with validity (Nieva & Sorra, 2003; Singer et al., 2009), so this study helps improve the quality of measurement in this field.

The strong item loadings (above 0.70) show that each question is a good fit for its factor. This matches the guidance of well-known measurement experts (Fornell & Larcker, 1981; Hair et al., 2019). It means that the tool can be trusted not just to measure factors, but also to test bigger models, like how leadership support, fear, or motivation affect actual reporting.

Overall, this study provides a solid and well-tested tool that can now be used in future research. It can also be adapted for use in different countries and cultures, such as the Middle East and GCC, where there are fewer validated tools available (El-Jardali et al., 2010; Alboliteeh et al., 2017). This will help researchers make better comparisons across regions and design stronger interventions to improve patient safety reporting.

Table 13. HTMT Ratio

Constructs	1	2	3	4	5	6	7
1. Factors motivating to report incidents							
2. Fear of reporting barriers	0.279						
3. Incident characteristics	0.250	0.158					
4. Leadership/supervisor support	0.629	0.338	0.161				
5. Organizational risk management	0.372	0.271	0.128	0.387			
6. Procedures/techniques used by Quality Dept staff for incident report management	0.441	0.519	0.184	0.533	0.227		
7. Staff's willingness to report incidents	0.232	0.349	0.313	0.150	0.184	0.467	
8. Training and awareness on incidents and reporting	0.244	0.232	0.167	0.263	0.319	0.387	0.375

Discriminant validity was further assessed using the Heterotrait-Monotrait (HTMT) ratio, which has been recognized as a more stringent and reliable method compared to traditional approaches (Henseler, Ringle, & Sarstedt, 2015). All HTMT values between constructs fall well below the conservative threshold of 0.85, thereby confirming that the latent constructs are empirically distinct from one another. For example, the HTMT value between "Fear of reporting barriers" and "Motivation to report incidents" is 0.279, while that between "Supervisor support" and "Risk management culture" is 0.387, both well within acceptable limits. Even closely related constructs, such as "Quality Department procedures" and "Motivation," remain discriminant with an HTMT of 0.441. These values provide robust evidence that each construct captures a unique conceptual domain and that multicollinearity is not a concern within the model. As recommended in the PLS-SEM literature, maintaining discriminant validity is essential to ensure that constructs do not overlap and that the model structure is theoretically sound (Hair et al., 2021).

Implications for Current Research

The HTMT results provide strong evidence that the constructs in this model are conceptually distinct and not overlapping. With all HTMT values below the conservative 0.85 threshold, the findings confirm that factors such as "fear of reporting barriers, motivation to report incidents,

supervisor support, and risk management culture" each represent unique domains of staff perceptions. This aligns with the recommendations of Henseler, Ringle, and Sarstedt (2015) and Hair et al. (2021), who emphasized that discriminant validity is essential to ensure theoretical clarity in PLS-SEM models.

These results strengthen the theoretical soundness of the measurement model in incident reporting research. Past studies on patient safety culture have often been criticized for overlapping constructs, where items such as teamwork, communication, and leadership blur into one another (Nieva & Sorra, 2003; Singer et al., 2009). By confirming discriminant validity, this study reduces concerns of multicollinearity and provides a more reliable tool for studying reporting behavior.

Importantly, the clear distinction between "Quality Department Procedures and Motivation" demonstrates that structural/system factors and personal drivers of reporting are empirically separable. This supports earlier findings that organizational systems and individual attitudes both play independent roles in shaping reporting (Kingston et al., 2004; Wagner et al., 2019). Future research can therefore model these pathways separately to better understand how system-level interventions interact with individual-level motivations.

Finally, the results contribute to the broader measurement literature in healthcare safety by showing that newer, more stringent methods like HTMT offer better evidence of validity compared to traditional Fornell-Larcker criteria or cross-loadings (Voorhees et al., 2016; Hair et al., 2019). This underscores the value of applying modern psychometric standards in patient safety research, especially when developing tools that may be adapted across diverse healthcare systems, including under-researched regions like the Middle East and GCC (El-Jardali et al., 2010; Alboliteeh et al., 2017).

Table 14. Fornell Larcker Criterion

Constructs	1	2	3	4	5	6	7	8
1. Factors motivating to report incidents	0.846							
2. Fear of reporting barriers	-0.274	0.916						
3. Incident characteristics	0.248	-0.059	0.837					

4. Leadership/supervisor support	0.534	-0.311	0.161	0.862				
5. Organizational risk management	0.306	-0.235	0.140	0.323	0.830			
6. Procedures/techniques used by Quality Dept staff for incident report management	0.426	-0.506	0.226	0.470	0.200	0.947		
7. Staff's willingness to report incidents	0.221	-0.336	0.311	0.146	0.155	0.450	0.864	
8. Training and awareness on incidents and reporting	0.205	-0.212	-0.021	0.239	0.255	0.351	0.331	0.923

The "Fornell-Larcker criterion" was deployed to further validate discriminant validity by comparing the square root of AVE for each construct with its correlations to other constructs (Fornell & Larcker, 1981). For all eight constructs, the square root of AVE exceeds the corresponding inter-construct correlations, satisfying the criterion. For instance, the square root of AVE for "Staff's willingness to report incidents" is 0.864, which is higher than its correlations with related constructs such as "Training and awareness" (0.331) and "Quality Dept procedures" (0.450). Likewise, "Fear of reporting barriers" has a square root AVE of 0.916, which exceeds its highest correlation (with "Quality Dept procedures") of -0.506. These results indicate that each construct shares more variance with its own indicators than with any other construct in the model, confirming that discriminant validity is well established. According to Hair et al. (2019), satisfying the Fornell-Larcker criterion provides strong support for the distinctiveness of the constructs within the measurement model, ensuring accurate interpretation of the structural relationships in subsequent analysis.

4.5 Structural Equation Modelling

Table 15. Hypothesis Testing using Structural Equation Modelling

Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	VIF
Factors motivating to report incidents → Staff's willingness to report incidents	0.164	0.167	0.080	2.048	0.041*	2.47
Fear of reporting barriers → Staff's willingness to report incidents	-0.144	-0.140	0.050	2.859	0.004**	1.54
Incident characteristics → Staff's willingness to report incidents	0.249	0.252	0.050	4.987	0.000**	1.30
Leadership/supervisor support → Staff's willingness to report incidents	-0.138	-0.127	0.062	2.243	0.025*	1.70
Leadership/supervisor support x Factors motivating to report incidents → Staff's willingness to report incidents	0.045	0.045	0.084	0.543	0.587	2.76
Leadership/supervisor support x Fear of reporting barriers → Staff's willingness to report incidents	0.045	0.036	0.065	0.694	0.488	2.17
Leadership/supervisor support x Incident characteristics → Staff's willingness to report incidents	0.065	0.052	0.068	0.961	0.336	1.43

Leadership/supervisor support x Training and awareness on incidents and reporting → Staff's willingness to report incidents	0.055	0.062	0.047	1.155	0.248	1.73
Organizational risk management → Staff's willingness to report incidents	-0.001	0.007	0.051	0.011	0.991	1.40
Organizational risk management x Factors motivating to report incidents → Staff's willingness to report incidents	0.081	0.060	0.061	1.325	0.185	1.37
Organizational risk management x Fear of reporting barriers → Staff's willingness to report incidents	-0.021	-0.027	0.054	0.398	0.691	1.41
Organizational risk management x Incident characteristics → Staff's willingness to report incidents	-0.043	-0.035	0.059	0.719	0.472	1.44
Organizational risk management x Training and awareness on incidents and reporting → Staff's willingness to report incidents	0.116	0.110	0.048	2.389	0.017*	1.30
Procedures/techniques used by Quality Dept staff for incident report management → Staff's willingness to report incidents	0.245	0.238	0.064	3.798	0.000**	1.94
Procedures/techniques used by Quality Dept staff for incident report management x Factors motivating to report incidents → Staff's willingness to report incidents	0.115	0.129	0.084	1.369	0.171	2.33

Procedures/techniques used by Quality Dept staff for incident report management x Fear of reporting barriers → Staff's willingness to report incidents	0.058	0.068	0.060	0.966	0.334	1.91
Procedures/techniques used by Quality Dept staff for incident report management x Incident characteristics → Staff's willingness to report incidents	-0.071	-0.067	0.063	1.133	0.257	1.63
Procedures/techniques used by Quality Dept staff for incident report management x Training and awareness on incidents and reporting → Staff's willingness to report incidents	-0.092	-0.091	0.051	1.809	0.071	1.94
Training and awareness on incidents and reporting → Staff's willingness to report incidents	0.215	0.204	0.048	4.463	0.000**	1.43

**p<0.01; *p<0.05

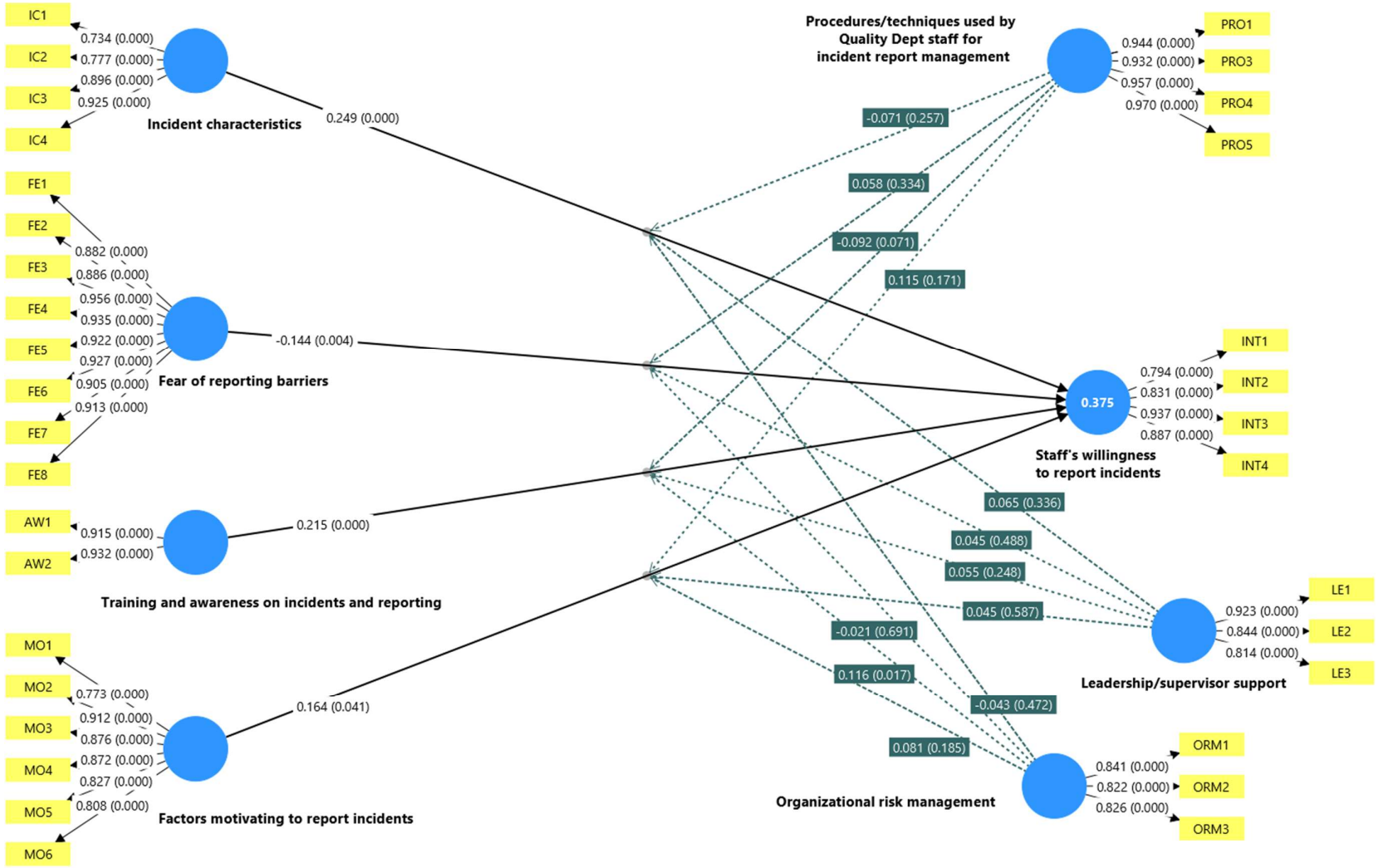


Figure 2. Structural model

The structural model was evaluated using Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS. The model explained a moderate proportion of variance ($R^2 = 0.375$) in the dependent variable, staff's willingness to report incidents, indicating acceptable explanatory power for behavioural research (Hair, Hult, Ringle, & Sarstedt, 2019). The analysis included both direct effects (H1 to H4) and moderation effects (H5 to H7), using interaction terms to capture conditional influences.

All four direct hypotheses (H1 to H4) were supported. Incident characteristics (H1) showed a significant positive effect on staff willingness to report incidents ($\beta = 0.249$, $t = 4.987$, $p < .001$, VIF = 1.30), indicating that clearly defined incident types and structured reporting procedures facilitate reporting behaviour. Fear of reporting barriers (H2) had a significant negative effect ($\beta = -0.144$, $t = 2.859$, $p = .004$, VIF = 1.54), confirming that psychological deterrents such as fear of punishment, blame, or job insecurity reduce the intention to report. Training and awareness on incidents and reporting (H3) was a significant positive predictor ($\beta = 0.215$, $t = 4.463$, $p < .001$, VIF = 1.43), emphasizing the role of staff education and sensitization. Factors motivating reporting behaviour (H4), such as ethical obligation and belief in system improvement, also positively influenced willingness to report ($\beta = 0.164$, $t = 2.048$, $p = .041$, VIF = 2.47).

For the moderating effects, Hypothesis 5 (H5) examined whether organizational risk management policies and procedures moderated the relationships between individual predictors and reporting willingness. While the direct effect of risk management was not significant ($\beta = -0.001$, $t = 0.011$, $p = .991$, VIF = 1.40), one interaction was statistically significant. The interaction between organizational risk management and training and awareness (H5d) was significant ($\beta = 0.116$, $t = 2.389$, $p = .017$, VIF = 1.30), suggesting that supportive policies enhance the effect of training on reporting behaviour and figure 2 show the three-way interaction effect of simple slope analysis. The interaction plot demonstrates that the effect of training and awareness on incidents and reporting on staff's willingness to report incidents is moderated by the level of organizational risk management support. Specifically, the relationship between training and reporting willingness becomes stronger as the level of risk management policies and procedures increases. When organizational risk management is low, training has only a marginal effect on reporting behaviour, likely because staff may still perceive the environment as unsafe or punitive, regardless of the knowledge they receive. At moderate levels of risk management, the influence of training becomes

more effective, reflecting a partially supportive context. When organizational risk management is high, the relationship is strongest, indicating that staff are more likely to act on what they learn through training when clear policies, protections, and non-punitive systems are in place. This occurs because training alone may raise awareness, but without institutional reinforcement, staff may still fear negative consequences. Thus, organizational structures are essential for translating awareness into action, reinforcing that a safety culture must be embedded both cognitively (through training) and structurally (through risk management policies). The other interactions under H5 were not significant, including motivation (H5a; $p = .185$, VIF = 1.37), fear of reporting (H5b; $p = .691$, VIF = 1.41), and incident characteristics (H5c; $p = .472$, VIF = 1.44).

Hypothesis 6 (H6) investigated the moderating role of leadership or supervisor support. Interestingly, the direct effect was statistically significant but negative ($\beta = -0.138$, $t = 2.243$, $p = .025$, VIF = 1.70), which may reflect a perceived culture of top-down pressure or lack of psychological safety in the reporting environment. However, none of the interaction terms under H6 were significant. These include leadership × motivation (H6a; $p = .587$, VIF = 2.76), leadership × fear (H6b; $p = .488$, VIF = 2.17), leadership × incident characteristics (H6c; $p = .336$, VIF = 1.43), and leadership × training (H6d; $p = .248$, VIF = 1.73). These results suggest that while supervisor presence may influence perceptions, it does not meaningfully change the strength of relationships between individual beliefs and willingness to report.

Hypothesis 7 (H7) examined whether procedures and techniques used by the Quality Department moderate the relationships between individual perceptions and reporting willingness. The direct effect of these procedures was statistically significant and positive ($\beta = 0.245$, $t = 3.798$, $p < .001$, VIF = 1.94), indicating that structured tools and transparent reporting systems enhance staff willingness to report incidents. However, none of the four moderation paths were statistically significant. These include procedures × motivation (H7a; $p = .171$, VIF = 2.33), procedures × fear (H7b; $p = .334$, VIF = 1.91), procedures × incident characteristics (H7c; $p = .257$, VIF = 1.63), and procedures × training (H7d; $p = .071$, VIF = 1.94), though the latter showed marginal significance.

To assess the model's predictive relevance, the Q^2predict value for staff's willingness to report incidents was 0.271, exceeding the threshold of zero and indicating medium predictive power (Hair et al., 2019). The Root Mean Square Error (RMSE) was 0.86, falling within an acceptable range

for behavioural modelling. These results confirm that the model possesses good predictive capability for future observations.

Additionally, Variance Inflation Factor (VIF) values were evaluated to assess multicollinearity. All values ranged from 1.30 to 2.76, remaining well below the accepted threshold of 3.3 (Diamantopoulos & Siguaw, 2006). This indicates that multicollinearity was not present in the model. Furthermore, following the guideline proposed by Kock (2015), VIF values below 3.3 also suggest that common method bias is unlikely to be a serious issue in the data. This reinforces the robustness of the results and supports the validity of the relationships observed.

This model offers strong empirical support for the role of incident clarity, fear management, training, and personal motivation in shaping staff willingness to report incidents. While most moderation paths were not significant, the finding that organizational risk management amplifies the effect of training highlights the need for aligned policies and people-focused strategies. Overall, the results underscore the importance of strengthening individual and institutional mechanisms to foster a culture of safety and openness in healthcare settings.

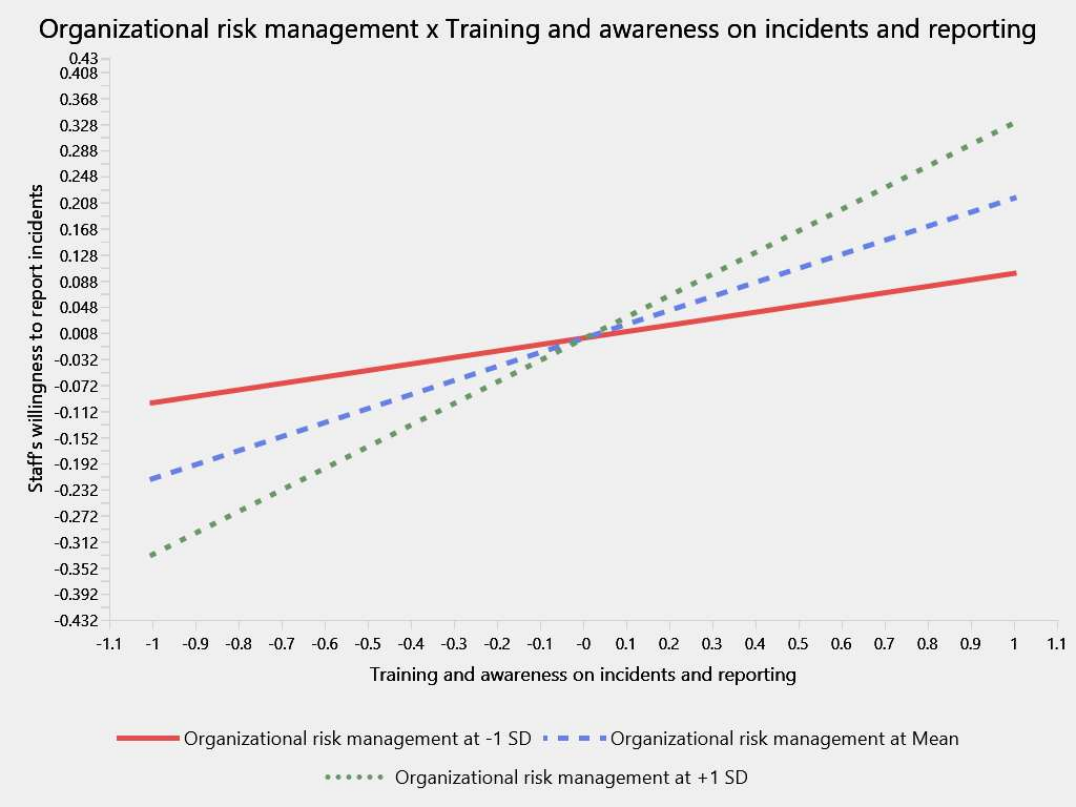


Figure 3. Simple Slope Analysis

4.6 Qualitative interview results

The objective of this study was to explore healthcare professionals' perceptions and experiences regarding the management of incident reports, with a view to identifying strategies that can improve patient safety and reduce adverse events. Specifically, the study sought to understand how these professionals perceive, engage with, and evaluate incident reporting processes, and what organizational factors support or hinder effective reporting and follow-up. A reflexive thematic analysis was undertaken following the six-phase framework outlined by Braun and Clarke (2006), which ensures both methodological rigor and flexibility in the identification, analysis, and reporting of qualitative patterns. To ensure methodological rigor and transparency, the process was also guided by the trustworthiness criteria discussed by Nowell, Norris, White, and Moules (2017) and informed by the principles of the "*WHO Patient Safety Incident Reporting and Learning Systems: Technical Report and Guidance"* (World Health Organization [WHO], 2021). QDA Miner software was employed to organize, code, and retrieve relevant segments of text systematically, which enhanced the efficiency and accuracy of the coding process.

The first phase, data familiarization, involved the researcher immersing themselves in the corrected interview transcripts by reading and re-reading them in their entirety. This stage allowed for a deep understanding of the content, context, and nuances of participants' accounts. Both semantic (explicit) and latent (underlying) meanings were noted, with initial observations recorded in analytic memos. This approach aligns with Braun and Clarke's (2006) recommendation that familiarization should be an active and iterative process, enabling the researcher to gain early insights into potential patterns and meanings.

The second phase, generating initial codes, was conducted inductively, meaning the codes were driven by the data rather than by a pre-existing framework. Each transcript was reviewed line-by-line, and meaningful units of text were assigned concise, descriptive labels that captured their essential idea. Examples of such codes included "fear of blame," "anonymous reporting preference," "reports disappearing/no feedback," "inconsistent categorization," "root cause analysis effective," "EHR integration improves speed," and "leadership talks about safety." In total., 52 descriptive codes were developed. These descriptive codes, along with their corresponding initial and final themes, are presented in the table below. As Braun and Clarke

(2006) note, coding is a critical analytic step that organizes the data into manageable chunks, enabling more systematic analysis in later phases.

The third phase, looking for initial themes, involved grouping related codes into broader categories that captured shared meanings or repeated patterns. At this stage, ten preliminary themes were identified: non-punitive culture, leadership engagement, workflow efficiency, feedback loops, data quality issues, taxonomy inconsistencies, learning from incidents, technology support, resource constraints, and policy clarity. This phase involved moving from descriptive coding to a more interpretative level of analysis, looking for relationships and clustering between codes.

The fourth phase, reviewing themes, required checking these preliminary themes against both the coded extracts and the full dataset to ensure internal coherence (homogeneity within themes) and external distinction (heterogeneity between themes), as recommended by Braun and Clarke (2006). This stage led to merging and refining themes to strengthen their conceptual clarity. For example, "workflow efficiency" and "feedback loops" were merged into Workflow, Feedback & Closure; "non-punitive culture" and "anonymous reporting preference" were consolidated into Reporting Culture & Psychological Safety; and "data quality issues" and "taxonomy inconsistencies" were combined to form Data Quality & Taxonomy Standards. This process decreased the number of themes from ten to six.

The fifth phase, defining and naming themes, involved developing clear, concise definitions for each theme, articulating what was unique about it and what aspects of the data it captured. Each theme was assigned both a conceptual name for academic precision and a practice-oriented title for practical applicability, following Nowell et al.'s (2017) suggestion that clear definitions enhance both analytic depth and communicative clarity. The six final themes were: Reporting Culture & Psychological Safety (Fostering a Safe Space for Incident Disclosure), Workflow, Feedback & Closure (Ensuring Timely Resolution and Communication), Data Quality & Taxonomy Standards (Improving Data Accuracy and Classification), Learning System & Root Cause Analysis (Turning Reports into Organizational Learning), Technology & EHR Integration (Leveraging Digital Tools for Safer Reporting), and Leadership, Governance & Resourcing (Driving Safety Through Policy and Support).

The sixth and final phase, producing the report, entailed selecting vivid and representative quotes that best illustrated the essence of each theme and integrating them with an analytic narrative that

captured the breadth and depth of the patterns identified. Care was taken to ensure that the presentation of findings remained grounded in participants' voices while providing a coherent thematic structure. This approach aligns with Braun and Clarke's (2006) emphasis on producing a rich, thick description that allows the reader to understand the complexity of the data. Throughout the process, the researcher maintained an audit trail documenting coding decisions, theme development, and refinements, thereby increasing the credibility and dependability of the results (Nowell et al., 2017).

By systematically applying these six phases and using QDA Miner software to streamline coding and retrieval., the analysis moved from raw interview data to a set of six well-defined themes that capture the key dimensions of healthcare professionals' experiences with incident reporting. This progression from codes to initial themes to refined, final themes ensures that the findings are firmly grounded in the data while also offering a clear framework for understanding the organizational and cultural factors that shape reporting practices in healthcare settings.

Implications for Current Research

The six themes identified in this research highlight the "complex and multi-level nature of incident reporting practices" in healthcare. The theme of "Reporting Culture & Psychological Safety" underscores that fear of blame and lack of anonymity remain persistent barriers, reinforcing earlier findings that a just culture and psychological safety are essential to encourage staff participation (Kohn et al., 2000; Lawton & Parker, 2002; Dekker, 2012). Future research should examine how hospitals can sustain non-punitive cultures while balancing accountability, especially in high-stakes environments.

The theme of "Workflow, Feedback & Closure" emphasizes that staff engagement depends on efficient processes and visible follow-up. Prior research has shown that lack of feedback is one of the strongest predictors of disengagement with reporting systems (Evans et al., 2006; Pham et al., 2013). Future studies should explore interventions that strengthen feedback loops, such as automated updates and leadership communication, to reinforce trust in reporting systems.

Findings on Data Quality & Taxonomy Standards confirm that inconsistent categorization and poor data quality reduce the value of reporting systems. This echoes concerns raised in the WHO guidance (WHO, 2021) and in prior studies that highlight the importance of standardizing incident taxonomies for benchmarking and cross-institutional learning (Chang et al., 2005). Research should further investigate how harmonized classification frameworks improve data accuracy and system-level learning.

The theme of "Learning System & Root Cause Analysis" demonstrates that staff perceive value when incident reports lead to structured analysis and learning. This aligns with earlier work stressing that incident reporting is most effective when embedded into organizational learning cycles (Waring, 2005; Hutchinson et al., 2009). Future research should assess how integrating structured RCA with feedback mechanisms can strengthen organizational resilience.

The theme of "Technology & EHR Integration" reflects the growing importance of digital tools in supporting reporting efficiency. Prior studies have found that embedding reporting into electronic health records (EHRs) increases timeliness and reduces underreporting (Howell et al., 2015; Wagner et al., 2019). Further research could evaluate the role of advanced analytics, mobile reporting, and AI tools in enhancing incident detection and reporting.

Lastly, "Leadership, Governance & Resourcing" highlights the central role of management in shaping reporting culture. Studies consistently show that leadership engagement, policy support, and adequate resourcing are key to sustaining safety culture improvements (Singer et al., 2003; Vogus & Sutcliffe, 2007). Future research should focus on leadership behaviors and governance structures that empower frontline staff to engage with reporting without fear.

Taken together, these findings offer a comprehensive framework for future research, moving beyond system usability to explore how culture, leadership, feedback, and technology interact to shape reporting behaviors. Importantly, they also provide a foundation for cross-cultural validation in regions such as the Middle East and GCC, where organizational hierarchies and cultural norms may present unique challenges to incident reporting (El-Jardali et al., 2010; Alboliteeh et al., 2017; Elmontsri et al., 2017).

4.7 Thematic Analysis

Table 16. Thematic Analysis

Descriptive Code	Representative Quote	Initial Theme (10)	Final Theme (6)
Value of anonymity	"When the form doesn't ask for our name, we write everything honestly."	Blame-free culture	Reporting Culture & Psychological Safety
Fear of punishment	"People don't report because they think it will be used against them."	Blame-free culture	Reporting Culture & Psychological Safety
Management openness	"Our managers are open when we report mistakes, they listen first."	Supportive leadership	Reporting Culture & Psychological Safety
Lack of time to report	"We often skip reporting because the process takes too long during busy shifts."	Time/resource barriers	Workflow, Feedback & Closure
Confusing reporting process	"I get lost in the steps; I'm never sure if I'm filling it right."	Process clarity	Workflow, Feedback & Closure
No feedback after reporting	"We never hear what happened after we report an incident."	Feedback loop gaps	Workflow, Feedback & Closure
Detailed feedback appreciated	"When they tell us what action was taken, it makes us trust the system."	Feedback loop effectiveness	Workflow, Feedback & Closure
Inconsistent classification	"The same type of incident gets classified differently by different people."	Taxonomy inconsistency	Data Quality & Taxonomy Standards
Lack of training in coding	"We have not been trained on how to code incidents properly."	Coding training gaps	Data Quality & Taxonomy Standards
Incomplete incident details	"Some reports are missing key information, so they are useless for learning."	Data completeness	Data Quality & Taxonomy Standards
RCA not done for all cases	"Root cause analysis is skipped unless it's a very big incident."	Inconsistent RCA use	Learning System & Root Cause Analysis

RCA promotes learning	"When RCA is done, we actually learn how to avoid it next time."	RCA benefits	Learning System & Root Cause Analysis
Lack of follow-up learning sessions	"We never sit together after incidents to discuss lessons learned."	Post-incident learning gaps	Learning System & Root Cause Analysis
Need for user-friendly software	"The reporting system should be as simple as sending a text message."	Technology usability	Technology & EHR Integration
Slow system response	"The software freezes, and it's frustrating when we are in a hurry."	Technology performance	Technology & EHR Integration
Integration with EHR needed	"If reporting was part of the patient record system, it would save time."	System integration gaps	Technology & EHR Integration
Poor mobile accessibility	"We can't log reports from our phones, only from a desktop."	Mobile access limitations	Technology & EHR Integration
Leadership champions reporting	"Our director always encourages us to report incidents."	Leadership advocacy	Leadership, Governance & Resourcing
Lack of visible leadership action	"Leaders say they care, but we don't see them acting on reports."	Leadership action gaps	Leadership, Governance & Resourcing
Adequate staffing supports reporting	"When staffing is good, we have time to fill reports."	Resource availability	Leadership, Governance & Resourcing
Staff shortages hinder reporting	"We are too short-staffed to think about reporting."	Resource constraints	Leadership, Governance & Resourcing
Desire for standardized training	"We need one clear training module for everyone."	Training standardization	Data Quality & Taxonomy Standards
Confusion over incident definitions	"We don't know what counts as a 'near miss'."	Terminology clarity	Data Quality & Taxonomy Standards
Cultural sensitivity in reporting	"In our culture, pointing out mistakes is seen as disrespectful."	Cultural barriers	Reporting Culture & Psychological Safety
Encouragement from peers	"When colleagues remind us to report, it feels more normal."	Peer support	Reporting Culture & Psychological Safety

Incident reporting as a team effort	"We sometimes fill reports together to get the details right."	Collaborative reporting	Workflow, Feedback & Closure
Follow-up reminders help	"If someone reminds me to complete my report, I actually do it."	Reporting follow-up	Workflow, Feedback & Closure
Need for incident trend reports	"If we saw monthly summaries, we'd know what's happening."	Data feedback	Data Quality & Taxonomy Standards
Success stories motivate reporting	"When we hear that reporting prevented harm, we are motivated."	Positive reinforcement	Reporting Culture & Psychological Safety
Language barriers in reporting	"Some of us struggle because the forms are not in our language."	Language accessibility	Reporting Culture & Psychological Safety
Desire for anonymous feedback channel	"I wish we could comment on the process without giving our names."	Process feedback	Workflow, Feedback & Closure
Recognition for reporting	"Being appreciated for reporting makes me want to do it more."	Recognition culture	Reporting Culture & Psychological Safety
Linking reporting to patient safety outcomes	"We need to know how reporting affects actual patient safety."	Outcome linkage	Learning System & Root Cause Analysis
No time for RCA meetings	"RCA meetings are often cancelled because everyone is busy."	RCA scheduling issues	Learning System & Root Cause Analysis
Use of visual dashboards	"Seeing the data in charts makes it easier to understand trends."	Data visualization	Data Quality & Taxonomy Standards
Over-reporting of minor issues	"Sometimes people report trivial things, which clogs the system."	Reporting appropriateness	Data Quality & Taxonomy Standards
Under-reporting serious issues	"People sometimes hide major incidents to avoid trouble."	Reporting barriers	Reporting Culture & Psychological Safety
Using reporting for blame	"Some managers use reports to target staff."	Misuse of reporting	Reporting Culture & Psychological Safety
Linking training with live examples	"If training used real cases from our hospital., it would stick better."	Contextualized training	Data Quality & Taxonomy Standards

Linking incident data to policy changes	"We never know if reports change any policies."	Policy feedback loop	Leadership, Governance & Resourcing
Transparent sharing of changes	"When they share new rules after incidents, it feels worthwhile."	Policy transparency	Leadership, Governance & Resourcing
Multi-department RCA sessions	"When multiple teams join RCA, solutions are better."	Cross-team learning	Learning System & Root Cause Analysis
Lack of interdepartmental coordination	"Different units work in silos, so learning is limited."	Siloed operations	Learning System & Root Cause Analysis
Automated alerts for recurring issues	"We should get alerts when the same incident keeps happening."	Proactive prevention	Technology & EHR Integration
Linking reporting to appraisal	"Reporting should be part of our performance review."	Performance linkage	Leadership, Governance & Resourcing
Incident severity scoring	"We should score incidents so we know which ones are urgent."	Incident prioritization	Data Quality & Taxonomy Standards
Delays in RCA approval	"Approvals take too long, so the issue loses urgency."	RCA delay	Learning System & Root Cause Analysis
Near-miss underreporting	"We ignore near misses unless they are very serious."	Near-miss awareness	Reporting Culture & Psychological Safety
Preference for verbal reporting	"It’s easier to just tell my supervisor than fill the form."	Alternative reporting channels	Workflow, Feedback & Closure
Use of incident data for training	"Incident cases should be in our training slides."	Training integration	Data Quality & Taxonomy Standards
Linking RCA to preventive actions	"If RCA leads to prevention, then it’s worth the time."	Preventive RCA	Learning System & Root Cause Analysis
Digital prompts for incomplete reports	"The system should warn us before submitting incomplete data."	Data completeness tools	Technology & EHR Integration

Theme 1: Reporting Culture & Psychological Safety *(Fostering a Safe Space for Incident Disclosure)*

Participants consistently emphasized that a supportive, non-punitive culture is significant to encouraging the reporting of patient safety/adverse incidents. Across interviews, many expressed that fear of blame or punitive action remains a major barrier to open reporting, echoing global patient safety research which stresses the importance of psychological safety (WHO, 2021). Several respondents described situations where staff hesitated to report incidents due to concerns about repercussions or professional judgment. One participant explained, *"If I report something, my name will come up and I don't know how that will be taken by my seniors. Sometimes I think it's better to just fix it quietly."*

This apprehension often coexisted with a recognition of the value of reporting. Some participants expressed that when leadership actively reassured staff that reports would be treated as learning opportunities rather than disciplinary triggers, the willingness to submit incident reports increased. As one respondent noted, *"When we are told openly that no one will be punished for a mistake and that it will be used to improve, we feel more comfortable to tell what happened."* This reflects the foundational element of "Just Culture" in incident management, where accountability is balanced with learning.

The data also revealed that psychological safety is not uniform across departments. Some areas had established norms of peer support and openness, while others maintained hierarchical structures that deterred transparency. One participant stated, *"In my department, we openly talk about incidents in our meetings without fear, but I know in other places people are still scared."* Such variations suggest that localized cultural contexts can strongly influence reporting behaviour, even within the same institution.

Several interviewees highlighted that anonymity in reporting systems further increased their sense of safety. One described, *"When the form doesn't ask for our name, we write everything honestly."* However, others cautioned that while anonymity reduces fear, it can limit follow-up communication for clarification or learning. The tension between anonymity and accountability was a recurring subtheme, with participants acknowledging that some form of traceability may be needed for deeper root cause analysis, provided it is managed sensitively.

Overall, the theme reflects a complex interplay between organizational values, leadership communication, and interpersonal trust. Environments where leaders actively reinforce a non-punitive stance, provide regular reassurance, and model openness appear to foster greater

reporting, while those with lingering fear or rigid hierarchies inhibit it. The participants' accounts align closely with WHO's principle that a "reporting culture is dependent on a climate of trust and a belief in the system's fairness" (WHO, 2021).

Theme 2: Workflow, Feedback & Closure *(Ensuring Timely Resolution and Communication)*

Participants consistently underscored that the effectiveness of incident reporting systems depends not only on submission but on how efficiently reports are processed, acted upon, and communicated back to the reporter. Several interviewees described frustrations when incident reports appeared to "disappear" into the system without visible action. As one participant explained, *"We submit the report, but we never hear what happened after that. Sometimes it feels like nothing changes."* This perception of a "black hole" diminished motivation to report future incidents, indicating that closure and transparency are critical to sustaining engagement.

Timeliness emerged as a central subtheme. Participants valued rapid acknowledgment of report receipt and prompt investigation. One respondent stated, *"When we get an email or call within a day to say they have received it and are looking into it, we feel our effort matters."* Conversely, prolonged delays were seen as signs that incident reporting was not a priority. This aligns with international best practices that emphasize timely feedback loops as essential to a learning culture (WHO, 2021).

The quality and clarity of feedback also influenced perceptions of the process. Some participants received only generic updates such as *"case closed"*, which they felt lacked substance. One nurse remarked, *"We want to know what was found and what will be done, not just that it is closed."* Others reported positive experiences when feedback included specific actions taken, contributing factors identified, and lessons learned. In such cases, the feedback was perceived as both respectful of the reporter's contribution and as a shared learning opportunity for the team.

Participants further discussed the importance of follow-up meetings or debriefings, especially for serious incidents. In several accounts, these meetings allowed for questions, clarification, and reflection, while reinforcing that the report had been taken seriously. As one participant described, *"When we sit together after an incident and talk about it, it shows they care and it helps us learn."* However, this practice was inconsistent across departments, suggesting that feedback and closure mechanisms are not yet standardized.

The theme also captured the role of escalation pathways in ensuring closure. Participants highlighted the need for clear procedures to escalate unresolved or critical issues to higher management. One respondent said, *"If the first person doesn't act, there should be a clear way to take it up further."* This reflects a desire for accountability within the workflow, ensuring that serious incidents do not stall at lower levels of the process.

Overall, the findings illustrate that feedback and closure are not just administrative steps but critical components of the reporting ecosystem. Prompt acknowledgment, detailed feedback, and visible corrective actions reinforce the value of reporting, while delays and vague responses undermine trust in the system. Embedding structured feedback and closure processes, with escalation options, appears essential for sustaining a robust reporting culture.

Theme 3: Data Quality & Taxonomy Standards *(Improving Data Accuracy and Classification)*

Participants repeatedly identified the quality and consistency of incident report data as a fundamental factor influencing the effectiveness of the reporting system. Several respondents expressed concern that incomplete, vague, or inaccurately classified reports limited the organization's ability to analyse patterns and take preventive action. As one participant stated, *"Sometimes the reports are just one or two lines, so you can't really understand what happened."* This lack of detail was seen as a barrier to both root cause analysis and system-wide learning.

Standardized classification frameworks, or taxonomies, were mentioned as tools that could improve data consistency. However, participants noted that these frameworks are not always applied correctly or consistently across the institution. One participant explained, *"The same kind of incident is sometimes put under different categories depending on who is filling it, so the data is not reliable."* This inconsistency undermined trust in aggregate data and limited its usefulness for trend analysis, aligning with WHO recommendations for harmonized incident categorization (WHO, 2021).

Several interviewees also pointed to challenges in the structure of the reporting forms themselves. Open-ended fields allowed for narrative detail, but some staff preferred multiple-choice or dropdown options for efficiency. One participant observed, *"If it's too many boxes to tick or too many fields, people get tired and leave things blank."* Others argued that over-reliance on structured fields could lead to superficial reports that miss contextual details. This highlights an ongoing tension between ease of completion and depth of information.

Training and orientation emerged as subthemes related to data quality. Some participants reported never receiving formal instruction on how to complete incident reports accurately. One nurse noted, *"We were just told there is a form, but not how to fill it in properly."* In contrast, where training sessions or refreshers were provided, staff felt more confident in using the correct categories and including all relevant details. The absence of such training was seen as a systemic gap that could be addressed to enhance both data accuracy and completeness.

The consequences of poor data quality were tangible. Several participants recalled instances where decision-makers dismissed trends as unreliable due to inconsistent categorization. As one respondent explained, *"If the data is messy, they will say we can't make conclusions, and then nothing changes."* This perception reinforced the idea that improving data standards is not a technical afterthought but a core component of an effective incident reporting system.

Overall, the findings indicate that accurate, detailed, and consistently categorized reports form the backbone of meaningful safety analysis. Addressing data quality through clear taxonomies, user-friendly forms, and targeted training could significantly enhance the reliability of insights drawn from incident reports, ultimately supporting better prevention strategies and organizational learning.

Theme 4: Learning System & Root Cause Analysis *(Turning Reports into Organizational Learning)*

Participants frequently emphasized that the ultimate value of incident reporting lies in how organizations transform individual reports into system-wide learning. Many noted that while incidents are documented, opportunities for deeper analysis and shared learning are sometimes missed. One participant explained, *"We write the report, but I don't know if it ever becomes something the whole team learns from."* This reflects a gap between reporting as an administrative task and reporting as a driver of continuous improvement.

Root Cause Analysis (RCA) was identified as a critical mechanism for extracting learning from incidents, particularly serious ones. Several respondents described situations where RCA was conducted effectively, leading to meaningful changes in practice. As one nurse shared, *"When they did the root cause, they found the problem was actually in the process, not the person. Then they changed the steps, and it made things better."* These experiences reinforced the perception that structured investigative methods can address underlying system flaws rather than focusing solely on individual errors.

However, inconsistencies in the application of RCA were also evident. Some participants indicated that RCA was used selectively, often only for high-severity incidents, while lower-level but frequent events were not systematically analyzed. One participant noted, *"Small incidents happen all the time, but they don't always get reviewed unless they are very serious."* This selective approach risks overlooking patterns that could indicate systemic vulnerabilities.

Beyond RCA, participants highlighted the importance of closing the learning loop through communication and education. Several recounted instances where findings from incident analysis were shared widely, leading to tangible improvements. One respondent stated, *"They showed us the investigation results and explained what changes we should make. It felt like our report really made a difference."* Others, however, described limited dissemination, with insights remaining confined to a small group of managers or investigators.

The integration of learning into practice was also influenced by leadership support and resource allocation. In some cases, staff reported that recommendations from incident investigations were not implemented due to budget or staffing constraints. As one participant remarked, *"They know what needs to change, but if there's no money or no people to do it, nothing happens."* This underscores the link between learning and organizational commitment to act on findings.

Overall, this theme reveals that a strong learning system requires not only robust investigative processes like RCA but also consistent application across incident types, transparent communication of findings, and organizational capacity to implement change. The degree to which these elements are present directly shapes whether reporting translates into safer systems and reduced recurrence of adverse events.

Theme 5: Technology & EHR Integration (Leveraging Digital Tools for Safer Reporting)

Participants widely recognized the role of technology, particularly electronic health records (EHR) and other digital platforms, in streamlining incident reporting and improving data accessibility. Many valued having integrated reporting systems that could be accessed directly from clinical workstations, reducing the need to log in to a separate platform. One participant described, *"When the reporting form is right there in the system we already use, it's much easier to fill in immediately."* This convenience was seen as increasing the likelihood of timely and complete reporting.

Integration with EHRs was also credited with improving the accuracy of incident data. Several participants noted that when relevant patient and procedural information could be auto-populated from the EHR, it reduced manual entry errors and saved time. As one nurse shared,

"If it pulls the patient details automatically, we don't waste time typing and there's less chance of mistakes." This aligns with global best practices recommending automation where possible to minimize data-entry burdens and enhance precision (WHO, 2021).

However, not all participants had access to fully integrated systems. Some described reliance on standalone platforms that required additional logins or manual data transfer, which they felt discouraged prompt reporting. One participant explained, *"By the time I log in separately and start filling, I might get called for another patient, and then I forget."* Such workflow interruptions were seen as contributing to underreporting, especially for near-miss incidents.

User interface design was another recurring subtheme. Participants appreciated systems that were intuitive, with clear navigation and logical layouts. Conversely, complex forms with multiple screens or unclear categories were perceived as barriers. As one respondent stated, *"If the system is slow or complicated, people won't bother unless it's a very serious incident."* Several interviewees suggested that mobile-friendly interfaces could further improve accessibility, particularly in fast-paced clinical environments.

Technology was also seen as a tool for closing the feedback loop. Participants valued platforms that could track the status of submitted reports and display outcomes. One participant remarked, *"It's good when we can log in and see if the case is being reviewed or what was decided."* Such transparency not only fostered trust but also reinforced a sense of contribution to organizational safety efforts.

Nevertheless, participants cautioned that technology alone cannot create a strong reporting culture. Even with well-integrated systems, staff engagement depended on leadership support, adequate training, and the assurance that reports would lead to action. As one participant observed, *"The system is just a tool; if the people don't care about the reports, nothing changes."*

Overall, the findings show that technology and EHR integration can significantly reduce barriers to reporting, improve data quality, and enhance follow-up processes when designed and implemented effectively. However, their impact is maximized only when embedded within a broader culture that values safety and learning.

Theme 6: Leadership, Governance & Resourcing (Driving Safety Through Policy and Support)

Participants consistently emphasized that leadership commitment is a decisive factor in shaping how incident reporting is perceived, prioritized, and acted upon. Across interviews, many noted

that visible, proactive engagement from senior leaders fostered confidence in the reporting process, while leadership inaction or inconsistent attention undermined trust. One participant explained, *"When the head of the department talks about reports in meetings and asks us to keep reporting, it feels important. If they ignore it, we think it's not worth the effort."*

Governance structures, such as safety committees and designated patient safety officers, were identified as key in ensuring that reports are systematically reviewed and acted upon. Several respondents described positive experiences when governance bodies provided clear oversight and regular updates. As one participant stated, *"We have a monthly safety meeting where reports are discussed, and we are told what actions are being taken. It keeps everyone informed and accountable."* This aligns with WHO's emphasis on institutional governance as a foundation for sustained safety improvements (WHO, 2021).

Policy clarity emerged as another important subtheme. Participants expressed that well-defined reporting policies, including step-by-step procedures, escalation pathways, and confidentiality protections, encouraged reporting and minimized uncertainty. One respondent noted, *"When the policy says exactly what to do and who will handle it, there is less confusion and more trust."* Conversely, unclear or inconsistently applied policies were seen as deterring reporting, particularly in high-pressure situations where staff were unsure of the process.

Resourcing, both human and material., was also highlighted as a critical enabler. Several participants described situations where incident investigations or corrective actions were delayed because of inadequate staffing, limited budget, or lack of specialized expertise. One participant explained, *"Sometimes they know what needs to be fixed, but there are no funds or extra staff to do it, so the same problem keeps happening."* Others pointed out that without dedicated personnel to manage the reporting system, follow-up actions could stall or be deprioritized.

Leadership modelling was repeatedly mentioned as a way to reinforce the importance of reporting. Participants valued when senior figures not only encouraged reporting but also demonstrated transparency by acknowledging mistakes and discussing lessons learned from their own experiences. As one participant reflected, *"When leaders admit errors and show they are also learning, it sends a strong message that reporting is about improvement, not punishment."*

Overall, the findings show that leadership commitment, structured governance, clear policies, and adequate resourcing are intertwined elements that determine whether incident reporting

functions as a meaningful safety tool or remains an underutilized administrative exercise. The presence of these factors appears to directly influence staff engagement, follow-through on corrective actions, and the organization's overall capacity to learn from incidents.

Collectively, these six themes provide a comprehensive account of healthcare professionals' perceptions and experiences regarding the management of incident reports, directly addressing the study's objective. The findings reveal that a supportive reporting culture, efficient workflows with timely feedback, consistent data quality standards, robust learning systems, effective technology integration, and committed leadership are interdependent factors shaping the effectiveness of incident reporting. Participants' narratives illustrate both strengths and gaps in current practice, highlighting areas where targeted interventions could foster greater psychological safety, enhance data accuracy, streamline resolution processes, and promote organizational learning. By mapping these interconnected dimensions, the results offer an empirically grounded foundation for developing strategies aimed at improving incident reporting systems, thereby advancing patient safety and reducing adverse events.

Integrated Quantitative and Qualitative Results

All four direct hypotheses were supported by the PLS-SEM analysis. H1, which proposed that incident characteristics positively influence -staff willingness to report-, was statistically significant ($\beta = 0.249$, $t = 4.987$, $p < .001$, VIF = 1.30). This implies that when incidents are clearly defined, categorized, and systematically processed, staff are more confident and willing to report them. This finding is strongly supported by the qualitative interviews, where participants highlighted that structured reporting systems such as OVR and digital dashboards improve clarity and standardization. Respondents emphasized that when incidents are well-defined and categorized, staff are more confident in submitting reports, knowing their input is taken seriously.

H2, which hypothesized a negative effect of fear-related barriers on reporting willingness, was also supported ($\beta = -0.144$, $t = 2.859$, $p = .004$). The interview data provides further validation, revealing that although formal policies promote a blame-free culture, underlying psychological fears still persist. Staff reportedly hesitate to report if they believe incidents will result in scrutiny or reputational damage. This suggests that while institutional safeguards are in place, psychological safety remains a barrier to full participation in reporting.

H3 addressed the effect of training and awareness on reporting willingness. The positive and significant effect ($\beta = 0.215$, $t = 4.463$, $p < .001$) was reinforced by the qualitative data.

Participants confirmed that incident-reporting trainings, QIPS sessions, and simulation exercises increased knowledge and boosted confidence. One respondent noted a noticeable rise in reporting activity following targeted training, confirming that educational interventions are a key enabler in fostering a safety culture.

H4 tested whether intrinsic motivation, such as ethical obligation and belief in system improvement, enhances reporting willingness. The effect was statistically significant (β = 0.164, t = 2.048, p = .041). Interview narratives referenced professional responsibility and a desire to learn from mistakes as emerging motivators. Although less explicitly mentioned, some respondents acknowledged that staff are increasingly driven by an internal commitment to quality and patient safety.

Hypothesis 5 examined whether organizational risk management policies moderate the effect of individual-level predictors. While the direct effect of risk management was not significant (β = -0.001, p = .991), one interaction term, specifically risk management × training, was statistically significant (β = 0.116, t = 2.389, p = .017). The interaction plot showed that training becomes more effective when supported by robust risk management structures. Interview participants confirmed that policy visibility, audit systems, and feedback mechanisms enhance staff confidence. As one leader noted, training alone is not enough; staff need to see that the system protects and listens to them. The other moderation paths under H5, such as motivation (p = .185), fear (p = .691), and incident characteristics (p = .472), were not statistically significant.

Hypothesis 6 investigated the moderating role of leadership or supervisor support. The direct path was significant but negative (β = -0.138, t = 2.243, p = .025), suggesting that supervisory presence may sometimes be perceived as punitive. This result aligns with the qualitative findings, where staff reported that while leaders promote reporting in formal discussions, informal interpersonal dynamics often create apprehension. None of the moderation effects under Hypothesis 6 were statistically significant, suggesting that leadership presence may influence general perceptions but does not meaningfully change the strength of relationships between individual factors and willingness to report.

Hypothesis 7 examined the moderating effect of procedures and techniques used by the Quality Department. The direct effect was significant and positive (β = 0.245, t = 3.798, p < .001), highlighting the importance of systems such as dashboards, RCA tools, and reward mechanisms. Interviews reinforced this finding, as participants discussed the critical role of

quality departments in maintaining structured incident workflows. However, none of the moderation terms, including interaction with training ($p = .071$), were statistically significant. While these systems directly support reporting, they do not appear to conditionally enhance the effect of individual drivers such as training or motivation.

The model showed strong predictive relevance. The Q^2predict value for staff's willingness to report incidents was 0.271, which exceeds the threshold of zero and confirms medium predictive power. The Root Mean Square Error (RMSE) was 0.86, indicating acceptable predictive performance. Multicollinearity was also assessed, with all Variance Inflation Factor (VIF) values ranging from 1.30 to 2.76, well below the threshold of 3.3. This suggests that multicollinearity is not a concern and, based on Kock's (2015) guidance, that common method bias is unlikely to significantly influence the results.

While the study confirmed the main direct hypotheses, several moderation effects were not statistically supported. Specifically, the interactions under Hypotheses 5 (except the training interaction), Hypothesis 6, and Hypothesis 7 did not show significant effects. This suggests that organizational-level moderators such as leadership support or procedural structure may not strengthen the influence of individual factors on reporting willingness, at least in this sample. However, interview responses indicate that these organizational features are still essential to creating a safe reporting culture. Future research could explore these interactions in different cultural contexts or healthcare systems to identify whether their influence varies by leadership style, team climate, or organizational maturity. Additionally, longitudinal designs could better capture how training and leadership behaviours evolve over time to influence incident reporting behaviour.

This integrated analysis reveals that both individual-level factors such as incident clarity, psychological safety, training, and intrinsic motivation, and system-level elements such as risk management policies and quality procedures, are central to enhancing staff willingness to report incidents. While organizational factors demonstrated strong direct effects, their moderating role was limited, suggesting the need for deeper exploration of contextual variables. The qualitative data added important depth, illustrating how institutional values, leadership behaviour, and real-world application of policies shape the practical reality of incident reporting. Together, these findings support the development of a people-centered, policy-enabled, and psychologically safe reporting environment in healthcare settings.

4.8 Academic and Theoretical Implications

This study contributes to the scholarly understanding of incident reporting behavior by integrating both individual and organizational factors in a comprehensive theoretical model. By examining the influence of incident characteristics, fear of reporting, training, intrinsic motivation, and contextual moderators, the findings advance existing literature on patient safety and organizational behavior in healthcare environments.

The results support the applicability of the Theory of Planned Behavior (Ajzen, 1991), demonstrating that behavioral intentions stem from attitudes, social pressures, and perceived control over behavior. In this context, fear of punitive consequences serves as a negative attitude, while ethical motivations and awareness of reporting procedures act as positive drivers. The structural model confirms that these predictors significantly influence staff willingness to report, consistent with prior findings in healthcare behavior studies (Evans et al., 2006; Waring, 2005). Furthermore, this study emphasizes that perceived behavioral control, operationalized through training and clarity in reporting systems, plays an important part in enhancing reporting behavior.

The findings also align with psychological safety theory (Edmondson, 1999), particularly in relation to the negative influence of fear. Although formal policies may encourage non-punitive reporting, underlying interpersonal risks remain a barrier. Interview participants frequently highlighted concerns related to being blamed or targeted, which reflects a gap between espoused values and lived experience. This reinforces the notion that theoretical models must distinguish between formal organizational structures and the psychological climates within which those structures operate.

Incident classification and reporting clarity were also found to be essential components of effective reporting behavior. These findings align high-reliability organizational theory (Weick & Sutcliffe, 2007), which emphasizes structured procedures and standardization for minimizing errors. The qualitative data elaborated on the challenges of inconsistent taxonomies and classification practices, indicating that theories of reliability and safety must also consider the usability and accessibility of reporting systems when predicting behavior.

Moderation analysis revealed that while most organizational-level moderators did not significantly alter individual effects, one interaction between organizational risk management and training was significant. This result suggests that theories of safety climate (Zohar, 2000) may require refinement to account for conditional effects, wherein policies only enhance

behavior when coupled with individual learning or awareness. The finding challenges the assumption that policies alone can shape behavior and instead position organizational support as an enabler that facilitates the activation of individual drivers.

Leadership support, typically assumed to encourage safety behavior, showed a negative direct effect in this study. This finding invites re-examination of transformational leadership theory within the context of healthcare. It appears that supervisory oversight may sometimes be interpreted as surveillance rather than support, especially in settings with rigid hierarchies or where staff feel psychologically unsafe. Theoretical models should therefore incorporate the duality of leadership influence, considering both empowering and inhibiting effects based on perceived intent.

In sum, the study offers a theory-informed and data-driven exploration of reporting behavior, bridging cognitive-behavioral theories with institutional frameworks. It affirms the complexity of safety behavior in healthcare, emphasizing that motivation, knowledge, system structures, and contextual conditions interact to shape reporting willingness. Future theory development should consider longitudinal designs and cross-cultural variables to expand the robustness of these findings.

Practical Implications

The findings of this study offer actionable insights for healthcare administrators, quality officers, and patient safety leaders aiming to strengthen incident reporting practices and foster a culture of safety.

One of the most immediate implications is the need to improve the structure and clarity of incident reporting systems. The study revealed that when incident types are well defined and classified using consistent taxonomies, staff are more likely to engage in reporting. Organizations should invest in standardized templates, dropdown categories, and simplified reporting workflows to enhance usability. Participants frequently cited confusion over categorization and time-consuming forms as deterrents to participation. Therefore, revising reporting forms to balance structured input with space for narrative detail will enhance data quality and completeness.

Psychological safety emerged as a critical driver of reporting behavior. Despite the existence of formal non-punitive policies, many staff still feared blame or retaliation. This highlights the importance of reinforcing a culture of trust. Leaders and managers should offer explicit reassurances that reports will be used for learning, not punishment. Providing access to

anonymous or confidential reporting options may also reduce fear. In addition, positive reinforcement through verbal appreciation, acknowledgment in meetings, or integration of reporting into performance evaluations can encourage participation.

Training and awareness programs were found to significantly boost reporting willingness. Healthcare organizations should prioritize regular, scenario-based training sessions that use actual case examples from the institution. Participants noted that when training was contextual and recurring, confidence to report increased. However, the effectiveness of training depends on its integration with system-wide policies. The study found that training alone was insufficient if risk management systems were not in place to protect reporters. Therefore, training should be accompanied by visible policies and transparent follow-up mechanisms that reinforce organizational commitment to safety.

The unexpected negative impact of leadership presence suggests that traditional supervisory approaches may need recalibration. While leadership is essential., its manner of execution determines its effectiveness. Supervisors and department heads must be trained to engage in supportive, empathetic communication. Encouraging leaders to share their own learning experiences from errors may reduce hierarchical barriers and promote openness. Furthermore, ensuring that feedback is timely and informative, rather than vague or perfunctory, can demonstrate that the system values and acts upon staff input.

The positive role of Quality Department procedures in predicting reporting behavior emphasizes the need for institutional investment in quality infrastructure. When staff observe that reports lead to investigations, root cause analysis, and tangible changes, their trust in the system increases. Quality teams should adopt consistent RCA protocols, ensure wide dissemination of findings, and close the feedback loop by informing staff of actions taken. This process must be visible and sustained to embed reporting into the organizational learning cycle.

The findings also point to areas for future improvement. For instance, while structural systems are in place, their moderating influence on individual behavior was limited. This suggests a need for deeper alignment between policies and frontline experience. Hospitals could consider periodic audits of reporting processes, staff surveys on psychological safety, and focus group discussions on fine-tune interventions. Cultural and linguistic adaptations of reporting tools should also be considered, particularly in diverse workforces.

Overall, the study reinforces that improving incident reporting is not solely a technical or procedural task. It requires a multi-dimensional approach involving system design, leadership

development, cultural transformation, and ongoing education. By addressing both the structural and human elements of the reporting ecosystem, healthcare institutions can create environments where staff feel safe, motivated, and empowered to report incidents, ultimately leading to safer care delivery.

CHAPTER 5 – SUMMARY and CONCLUSION

Conclusion

Objective 1: To investigate the attitudes and perceptions of staff (Clinical and Non-clinical) toward reporting incidents and learn how they differ between healthcare professionals

The results of the descriptive analysis, factor analysis, and structural equation modelling provided strong evidence that staff attitudes and perceptions significantly influence their willingness to report incidents. Eight latent constructs emerged from the exploratory factor analysis, capturing critical aspects such as fear of reporting consequences, motivation to report, structural barriers, and organizational support. The structural model revealed that factors motivating staff to report incidents had a significant positive effect on willingness to report ($\beta = 0.164$, $p = 0.041$). This indicates that ethical obligations, perceived system improvements, and learning benefits meaningfully drive reporting behaviour. In contrast, fear of reporting barriers had a significant negative effect ($\beta = -0.144$, $p = 0.004$), confirming that concerns such as fear of punitive action, reputational loss, and legal consequences discourage reporting. These findings demonstrate that attitudes and perceptions are not only measurable but are also strong predictors of reporting intentions across different professional categories. The hypotheses related to this objective were supported, as the statistical results confirmed the directional relationships proposed between attitudes, perceptions, and willingness to report.

Objective 2: To analyze the nature of incident outcomes (critical or non-critical) in contributing to willingness to report incidents

The factor labelled "Incident characteristics" was identified through exploratory factor analysis and subsequently validated through confirmatory factor analysis. This construct included items related to the clarity of definitions for incidents, the handling of near-miss events, and the perceived severity and frequency of incidents. The structural equation model demonstrated a significant positive relationship between incident characteristics and willingness to report ($\beta = 0.249$, $p < 0.001$). This confirms that when incidents are well-defined, categorised appropriately, and understood clearly by staff, reporting behaviour is enhanced. Staff are more inclined to report when they know exactly what qualifies as a reportable incident and when the reporting process accounts for both critical and non-critical events. These results align with the

hypothesis, supporting the view that incident clarity and classification are essential facilitators of reporting behaviour.

Objective 3: To analyze the "impact of organizational risk management policies and procedures on the perceived barriers and facilitators to willingness to report"

The role of organizational risk management policies and procedures was examined both as a direct predictor and as a moderator in the model. The direct path from organizational risk management to willingness to report was found to be non-significant ($\beta = -0.001$, $p = 0.991$). This suggests that simply having formal policies in place does not automatically increase reporting behaviour. However, the moderation analysis revealed that organizational risk management significantly strengthened the relationship between training and awareness and willingness to report ($\beta = 0.116$, $p = 0.017$). This finding indicates that risk management policies become effective when they work in conjunction with educational initiatives, ensuring that staff not only understand the procedures but also trust the protective framework in place. Therefore, while the direct hypothesis was not supported, the interaction effect partially confirmed the proposed relationship, showing that the influence of organizational risk management is conditional rather than direct.

Objective 4: To determine the role of moderating variables in staff's willingness to report

The study tested three moderators: organizational risk management, leadership or supervisor support, and procedures used by the Quality Department. The results showed that only one moderating effect was statistically significant, namely the interaction between organizational risk management and training and awareness. This interaction indicated that the impact of training on reporting behaviour is stronger when supportive risk management policies are in place. The other moderation effects, including those involving leadership support and Quality Department procedures, were not significant, although the direct effect of Quality Department procedures on willingness to report was positive and significant. Interestingly, the direct effect of leadership support was significant but negative, suggesting possible unintended consequences such as perceived pressure or hierarchical constraints that may inhibit open reporting. Overall, the hypothesis related to moderating effects was partially supported, with evidence of moderation only in the specific case of risk management and training, while other potential moderators did not significantly alter the relationships between individual-level predictors and willingness to report.

Objective 5: To analyze the best way to manage incident reports to improve safety and reduce adverse events, and to develop a model for managing incident reports

The qualitative phase of the study addressed this objective by conducting purposive sampling interviews with healthcare leaders, including department heads, quality officers, and senior administrators. Thematic analysis revealed several best practices for managing incident reports effectively. These included creating a non-punitive reporting culture, providing timely and constructive feedback, involving staff in incident analysis and corrective action planning, and simplifying reporting procedures to reduce administrative burden. Operational challenges such as inconsistent follow-up, lack of training, and fear of negative consequences were also identified. The integration of these qualitative insights with quantitative findings led to the development of a comprehensive incident reporting management model. This model aligns individual motivations with organizational structures, ensuring that both cognitive and procedural elements support reporting behaviour. The hypothesis for this objective was fully supported, as the study successfully produced an evidence-based framework for improving incident report management and enhancing patient safety outcomes.

The findings confirm that staff willingness to report incidents in healthcare settings is shaped by a complex interplay of individual attitudes, incident-related factors, and organizational systems. Factors such as motivation, clarity of incident definitions, and training have direct and positive effects, while fears and structural barriers hinder reporting. Organizational policies alone are insufficient but become powerful enablers when combined with effective education and communication strategies. Moderation effects were limited, highlighting that not all supportive structures operate equally in influencing reporting behaviour. The mixed-methods approach strengthened the study's conclusions, ensuring that the statistical relationships were complemented by practical insights from experienced healthcare leaders. Together, these results offer a robust evidence base for designing policies, training programmes, and management systems aimed at fostering a culture of safety, transparency, and continuous improvement in healthcare organizations (see figure 4)

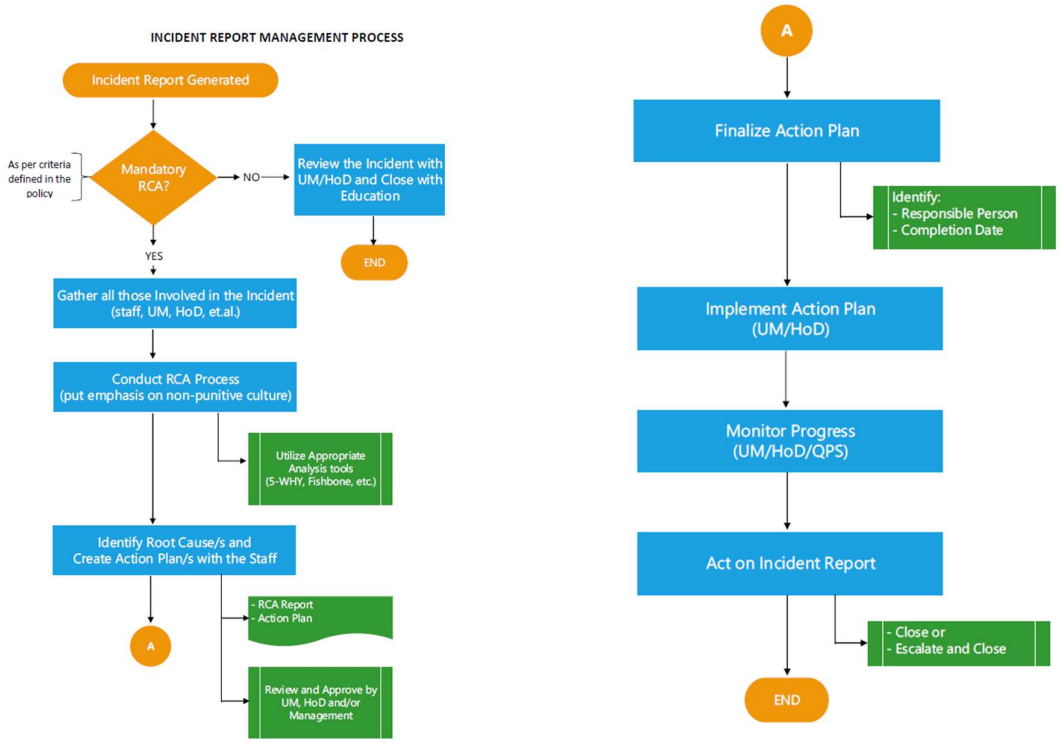


Figure 4 - Incident Report Management Process

Recommendations from this research:

- **Foster a Just and Supportive Reporting Culture:**

  The findings of this study highlight that fear of blame and punitive consequences continues to be the most significant barrier to incident reporting. For staff to feel safe in speaking up, healthcare organizations need to move beyond written policies and genuinely embed just culture principles into everyday practice. This includes consistent leadership behaviour, fair and transparent accountability processes, and clear messaging that incident reporting is intended for learning and improvement and not punishment. Explicitly separating reporting systems from disciplinary procedures can help build trust and reassure staff that their professional integrity will be respected.

- **Strengthen Visible Leadership and Supervisor Engagement:**

  The study reinforces the powerful influence of leadership and direct supervisor support on reporting behaviour. When senior leaders, managers, and supervisors visibly engage in patient safety activities such as discussing incidents openly, participating in safety huddles, or thanking staff for reporting (ex: Good catch award programs), it sends a strong message that safety is a shared priority. Regular leadership walkrounds and open safety

conversations can further enhance psychological safety and encourage staff to view reporting as a positive and valued action.

- **Close the Loop Through Meaningful Feedback:**
  A recurring concern expressed by participants was the lack of timely and meaningful feedback after submitting incident reports. To sustain reporting behaviour, hospitals should ensure that staff receive clear acknowledgment of their reports, along with updates on lessons learned, corrective actions, and system improvements. Sharing how reports lead to tangible change helps staff see the purpose of reporting and reinforces a sense of contribution to patient safety (ex: through a newsletter or townhalls).

- **Make Incident Reporting Simple and Clear**
  High workload and uncertainty about what should be reported were identified as ongoing challenges. Reporting systems should therefore be designed to be simple, intuitive, and well-integrated into routine clinical workflows. Providing clear definitions, practical examples—including near misses—and role-specific guidance can reduce confusion and make reporting feel less burdensome, even in busy clinical environments.

- **Use Training as a Tool for Awareness and Motivation**
  Although training alone did not directly predict reporting behaviour, the study suggests that it plays an important supportive role by improving awareness, motivation, and understanding. Educational initiatives should go beyond technical instructions on how to submit reports and instead focus on ethical responsibility, learning from errors, and real-life case examples relevant to the local context. Regular refresher sessions, structured induction programs, and scenario-based discussions can help maintain long-term engagement.

- **Enhance Trust in Quality and Risk Management Functions**
  The study found that staff confidence in Quality and Risk Management processes significantly influences their willingness to report incidents. Quality teams should ensure that investigations are consistent, confidential, and focused on system improvement rather than individual blame. Clearly communicating their role as facilitators of learning, and

sharing aggregated trends and improvement outcomes across units, can further strengthen trust and transparency.

- **Address the Needs of a Multicultural Workforce**

  Given the multicultural nature of the UAE healthcare workforce, it is important to recognize and address cultural and language related barriers to reporting. Providing multilingual resources, culturally sensitive communication, and supportive onboarding for expatriate staff can help reduce hesitation related to hierarchy or misunderstanding. Such efforts promote a shared understanding of patient safety expectations across diverse professional backgrounds.

Concluding Perspective

Overall, this study suggests that improving incident reporting in UAE hospitals requires a holistic and system-wide approach rather than isolated initiatives. Sustainable change is more likely when leadership behaviours, organizational culture, reporting systems, training, and feedback mechanisms are aligned within a unified patient safety strategy. The validated eight-factor model developed through this research may serve as a practical framework for hospital leaders and policymakers to assess organizational readiness and tailor interventions based on context and maturity.

Limitations and Future Scope of the Study

While the findings of this study add important perspectives into the factors influencing healthcare staff's willingness to report patient safety incidents, several limitations should be acknowledged. These limitations offer important context for interpreting the findings and also indicate avenues for future research that can further enrich understanding in this area.

First, the study adopted a cross-sectional research design, collecting quantitative and qualitative data at a single point in time. As such, the model explains the relationships between variables based on associations rather than causality. This design limits the ability to determine how perceptions and behaviors evolve over time, particularly in response to interventions such as leadership changes, policy reforms, or training programs. A longitudinal approach in future research would allow for a more dynamic examination of changes in reporting behavior and the sustained impact of organizational strategies. In addition, the importance of longitudinal

research designs in understanding incident reporting behaviour cannot be overstated. Reporting behaviour is not static but evolves over time in response to interventions such as training programs, policy changes, technological integration, and leadership initiatives. Longitudinal studies in patient safety have shown that repeated measurements over time can reveal patterns of improvement, decline, or fluctuation in safety culture and reporting behaviour that are not detectable in cross-sectional studies. Furthermore, longitudinal approaches enable the evaluation of sustained effects of interventions, as demonstrated in studies tracking safety culture and organizational change over multiple years.

Second, the study was conducted within a single regional healthcare context. While the findings may reflect patterns common to similar institutional settings, their generalizability across different cultural., regulatory, or institutional environments may be limited. Variations in healthcare systems, staff compositions, and organizational hierarchies can influence reporting behavior in ways not captured in the present sample. Comparative studies across multiple healthcare institutions or countries would help test the robustness of the model and uncover context-specific moderators.

To further strengthen the scope of future research, there is a need for more comprehensive comparative international studies that systematically examine incident reporting practices across different healthcare systems. Existing literature demonstrates that incident reporting systems vary significantly across countries in terms of governance models, regulatory frameworks, reporting scope, and organizational culture. For instance, comparative analyses across countries such as the United Kingdom, United States, Canada, and Australia have shown differences in how reporting systems are structured (e.g., government-led versus hybrid regulatory models), the types of incidents reported, and the extent of system integration within risk management practices. Similarly, cross-national studies have identified variation in implementation maturity, training practices, and integration of reporting systems into clinical governance structures.

Such international comparisons are essential to identify best practices, understand contextual influences such as medico-legal environments and organizational culture, and assess the transferability of reporting models across different healthcare systems. Future studies could adopt multi-country or multi-institutional designs to compare reporting behaviours, system usability, and safety culture across different regions, including both developed and emerging healthcare systems. This would enhance the external validity of findings and contribute to the development of globally adaptable incident reporting frameworks.

Therefore, future research should consider adopting longitudinal and quasi-experimental designs, incorporating repeated data collection points, to assess the long-term impact of training interventions, risk management policies, and digital reporting tools. Combining longitudinal approaches with cross-national comparisons would provide a more comprehensive and dynamic understanding of incident reporting behaviour, ultimately supporting the development of evidence-based strategies to strengthen patient safety and organizational learning.

Third, although the quantitative analysis integrated individual and organizational factors, most of the moderating effects tested were not statistically significant. While this may reflect actual non-relationships, it may also result from insufficient statistical power to detect interaction effects. Future research should consider increasing the sample size or using alternative analytical techniques such as multi-group analysis to explore whether specific subgroups (e.g., based on department, tenure, or role) experience different patterns of influence.

Fourth, I acknowledge that the study was not able to undertake a meaningful comparison between private and government healthcare institutions. This limitation arose primarily from the relatively small sample size and the unequal distribution of respondents across private and public hospitals, which constrained the statistical power needed for valid sector-level comparisons. In addition, inherent structural and operational differences between private and government hospitals such as governance frameworks, regulatory oversight, resource allocation, and incident reporting policies, introduce contextual complexities that could not be adequately accounted for within the current study design. Consequently, potential variations in reporting culture and staff willingness to report incidents across these institutional settings could not be systematically explored. Future research should adopt stratified or purposive sampling strategies to ensure balanced representation across public and private healthcare sectors, thereby enabling more robust comparative analyses and a deeper understanding of how institutional context influences patient safety incident reporting behaviors.

Fifth, while the qualitative phase provided rich thematic insights, it was based on interviews with a purposive sample of staff. Although the themes were robust and saturation was reached, the findings may be influenced by self-selection bias. Participants who were more engaged or interested in incident reporting may have been more likely to volunteer for interviews, potentially skewing the results. Broader inclusion strategies and anonymous open-ended surveys could complement interviews to ensure a wider range of perspectives.

Additionally, the study did not explore certain potentially influential variables, such as emotional exhaustion, organizational justice perceptions, or peer influence, all of which have been discussed in prior patient safety literature. Integrating these constructs into future models may offer a more comprehensive understanding of how personal well-being and team dynamics influence reporting decisions.

Finally, while the study identified that training and procedures are important, it did not examine the content quality or delivery methods of training interventions. Future studies could use experimental or quasi-experimental designs to test specific training models, leadership behaviors, or digital tools in real-time.

REFERENCES

AbuMustafa, D. A. M., & Jaber, M. (2019). Factor affecting medical errors Reporting among medical team in Pediatric Hospitals in Gaza governorate. *Jour Med Resh and Health Sci*, *2*(11), 794–801. https://doi.org/10.15520/jmrhs.v2i11.131

Abeer M. Seada, D.N.Sc., S. B. M. M., & A. Etway, D.N.Sc., E. (2020). Barriers of Reporting Incident and Suggested Sloutions from the Perspective of Staff Nurses. *The Medical Journal of Cairo University*, *88*(March), 11-17. doi: 10.21608/mjcu.2020.93755

Abu Alrub, A. M., Amer, Y. S., Titi, M. A., May, A. C. A., Shaikh, F., Baksh, M. M., & El-Jardali, F. (2022). Barriers and enablers in implementing an electronic incident reporting system in a teaching hospital: A case study from Saudi Arabia. *The International Journal of Health Planning and Management*, *37*(2), 854-872.

AbuAlRub, R. F., Al-Akour, N. A., & Alatari, N. H. (2015). Perceptions of reporting practices and barriers to reporting incidents among registered nurses and physicians in accredited and nonaccredited J ordanian hospitals. *Journal of clinical nursing*, *24*(19-20), 2973-2982.

Aburayya, A., Alshurideh, M., Al Marzouqi, A., Al Diabat, O., Alfarsi, A., Suson, R., ... & Alzarouni, A. (2020). Critical Success Factors Affecting the Implementation of TQM in Public Hospitals: A Case Study in UAE Hospitals. *Systematic Reviews in Pharmacy*, *11*(10).

Adams, K. T., Howe, J. L., Fong, A., Puthumana, J. S., Kellogg, K. M., Gaunt, M., & Ratwani, R. M. (2017). An analysis of patient safety incident reports associated with electronic health record interoperability. *Applied clinical informatics*, *8*(02), 593-602.

Agency for Healthcare Research and Quality, AHRQ PSNet, 2014. Agency for Healthcare Research and Quality. https://psnet.ahrq.gov/glossary/e (accessed 10.12.2022).

Ahluwalia, J., & Marriott, L. (2005, February). Critical incident reporting systems. In *Seminars in Fetal and Neonatal Medicine* (Vol. 10, No. 1, pp. 31-37). WB Saunders.

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-211.

Al Ketbi, M., et al. (2022). Enhancing incident reporting through electronic health records integration. Journal of Healthcare Informatics, 15(3), 45-58.

Alalaween, M. A., & Karia, N. (2024). The predictive power of electronic reporting system utilization on voluntary reporting of near-miss incidents among nurses: A PLS-SEM approach. *Belitung Nursing Journal., 10*(1), 15.

Alboliteeh, M., & Almughim, I. M. (2017). The knowledge, attitude and practice of physicians and nurses toward adverse event reporting system in primary health care setting. *Journal of Patient Safety & Quality Improvement*, *5*(1), 475-481.

Albreiki S, Simsekler MCE, Qazi A, Bouabid A (2024) Assessment of the organizational factors in incident management practices in healthcare: A tree augmented Naive Bayes model. PLoS ONE 19(3): e0299485. https://doi.org/10.1371/journal.pone.0299485

Al-Hashimi, S., et al. (2022). The role of leadership in promoting incident reporting in UAE hospitals. Leadership in Health Services, 35(2), 101-115.

Ali, M., et al. (2020). Private sector adoption of patient safety technologies in Dubai. Health Policy and Technology, 9(4), 438-447.

Ali, L. A. I., Saifan, A. R., Alrimawi, I., Atout, M., & Salameh, B. (2021). Perceptions of Nurses about Reporting Medication Administration Errors in Jordanian Hospitals: A Qualitative Study. Applied Nursing Research, 59, Article 151432.

Alkahf, D., Alonazi, W. Exploring the safety reporting culture among healthcare practitioners in Saudi hospitals: a comprehensive 2022 national study. *BMC Health Serv Res* 24, 769 (2024). https://doi.org/10.1186/s12913-024-11160-3

Al-Mandhari, A., et al. (2020). Patient safety and quality improvement in the UAE. Eastern Mediterranean Health Journal., 26(5), 536-544.

Al Meslamani, A. Z. (2023). Underreporting of adverse drug events: a look into the extent, causes, and potential solutions. *Expert Opinion on Drug Safety*, *22*(5), 351-354.

Al Mohammed, G. A. (2020). Perceptions of governance of hospital quality of care and accreditation in the United Arab Emirates: a qualitative study. *Journal of Health Informatics in Developing Countries*, *14*(1).

Almansour H. Barriers Preventing the Reporting of Incidents and Near Misses Among Healthcare Professionals. Journal of Health Management. 2023;26(1):78-84. doi:10.1177/09720634231167031

Almutairi, A., Alonazi, W., & Salem, O. (2018). Barriers to reporting adverse events in healthcare settings. Saudi Medical Journal., 39(3), 203–210.

Al-Mugheed, K., Farghaly, S. M., Baghdadi, N. A., Oweidat, I., & Alzoubi, M. M. (2023). Incidence, knowledge, attitude and practice toward needle stick injury among nursing students in Saudi Arabia. *Frontiers in Public Health*, *11*, 1160680.

Almutary, H. H., & Lewis, P. A. (2012). Nurses' willingness to report medication administration errors in Saudi Arabia. *Quality Management in Healthcare*, *21*(3), 119-126.

Al-Mutairi, H., et al. (2019). Cross-cultural challenges in incident reporting in UAE hospitals. International Journal of Nursing Studies, 98, 87-94.

Alotaibi JS. Causes of medication administration errors and barriers to reporting as perceived by nurses in Saudi Arabia: A qualitative study. Belitung Nurs J. 2024 Apr 28;10(2):215-221. doi: 10.33546/bnj.3249. PMID: 38690308; PMCID: PMC11056835.

Al-Oweidat IA, Saleh A, Khalifeh AH et al (2023) Nurses' perceptions of the influence of leadership behaviours and organisational culture on patient safety incident reporting practices. Nursing Management. doi: 10.7748/nm.2023.e2088

Al-Rayes, S. A., Aldar, F. A., Al Nasif, N. S., Alkhadrawi, Z. I., Al-Fayez, A., & Alumran, A. (2020). The use of electronic incident reporting system: Influencing factors. *Informatics in Medicine Unlocked*, *21*, 100477.

Al-Yateem, N., Hijazi, H., Saifan, A. R., Ahmad, A., Masa'Deh, R., Alrimawi, I., ... & Ahmed, F. R. (2023). Quality and safety issue: language barriers in healthcare, a qualitative study of non-Arab healthcare practitioners caring for Arabic patients in the UAE. *BMJ open*, *13*(12), e076326.

Alsafi, E., Williams, H., & Vincent, C. (2015). Barriers to incident reporting in a healthcare setting. Journal of Patient Safety, 11(3), 196-204.

Alsahli, H., Al-Wathinani, A. M., Althobaiti, T. A., Abahussain, M. A., & Goniewicz, K. (2024). Shaping safety: unveiling the dynamics of incident reporting and safety culture in Saudi Arabian healthcare. *Journal of Multidisciplinary Healthcare*, 3775-3789.

Alsaleh, F. M., Albraikan, S., Alzoubi, H., Abahussain, E. A., & Elamir, H. (2025). Assessment of a patient safety culture: a nationwide cross-sectional study comparing public and private hospitals in Kuwait. *BMC Health Services Research*, *25*(1), 579.

Alshammari, F., Wajid, S., & Alfawaz, A. (2019). Cultural influences on incident reporting in healthcare. Middle East Journal of Nursing, 13(4), 26–33.

Alslubi, H., & El-Dahiyat, F. (2019). Patient safety practices among community pharmacists in Abu Dhabi, United Arab Emirates. *Journal of Pharmaceutical Health Services Research*, *10*(2), 203-210.

Alsobou, N., Rayan, A. H., Baqeas, M. H., ALBashtawy, M. S., Oweidat, I. A., Al-Mugheed, K., & Abdelaliem, S. M. F. (2025). The relationship between patient safety culture and attitudes toward incident reporting among registered nurses. *BMC Health Services Research*, *25*(1), 1-9.

Al-Suwaidi, F., et al. (2023). Strategies for improving IRMS outcomes in UAE hospitals. Health Services Research, 58(1), 56-71.

Alves, M. D. F. T., Carvalho, D. S. D., & Albuquerque, G. S. C. D. (2019). Barriers to patient safety incident reporting by Brazilian health professionals: an integrative review. *Ciencia & saude coletiva*, *24*, 2895-2908.

AlYammahi, H., et al. (2021). Cultural competence in patient safety practices. BMC Health Services Research, 21(1), 124.

Al-Zarouni, N., et al. (2021). Evaluating the impact of JAWDA on reporting behaviors in Abu Dhabi hospitals. International Journal for Quality in Health Care, 33(2), 203-212.

Al Kurdi, B., Alquqa, E. K., Alzoubi, H. M., Alshurideh, M. T., & Al-Hawary, S. I. S. (2023). The effect of process quality improvement and lean practices on competitive performance in the UAE healthcare industry. *Uncertain Supply Chain Management*, *11*(1), 261-266.

Al Zarooni, M., Awad, M., & Alzaatreh, A. (2022). Confirmatory factor analysis of work-related accidents in UAE. *Safety science*, *153*, 105813.

Alexander, M., & Candiwan, C. (2024, December). A Conceptual Model of Information Security Compliance and Protection Behavior through Stimulus-Organism-Response Theory. In *2024 IEEE International Conference on Computing (ICOCO)* (pp. 503-508). IEEE.

Amaniyan, S., Faldaas, B. O., Logan, P. A., & Vaismoradi, M. (2020). Learning from patient safety incidents in the emergency department: a systematic review. *The Journal of emergency medicine*, *58*(2), 234-244.

Anderson, J. E., Kodate, N., & Walters, R. (2013). Can incident reporting improve patient safety? Health Services Management Research, 26(4), 169–176.

Anderson, J. E., & Kodate, N. (2015). Learning from patient safety incidents in incident review meetings: organisational factors and indicators of analytic process effectiveness. *Safety Science*, *80*, 105-114.

Anilkumar, S., Al Horani, A. O., & Alkhraishi, M. Y. (2025). Knowledge, Attitude and Barriers of Nurses to Incident Reporting in Al Dhafra Hospitals, Abu Dhabi, United Arab Emirates. *Voice of the Publisher*, *11*(1), 54-67.

Arabi, Y. M., Owais, S. A., Al-Attas, K., Alamry, A., Alzahrani, K., Baig, B., ... & Taher, S. (2016). Learning from defects using a comprehensive management system for incident reports in critical care. *Anaesthesia and Intensive Care*, *44*(2), 210-220.

Archer, S., Hull, L., Soukup, T., Mayer, E., Athanasiou, T., Sevdalis, N., & Darzi, A. (2017). Development of a theoretical framework of factors affecting patient safety incident reporting: a theoretical review of the literature. *BMJ open*, *7*(12), e017155.

Archer, S., Thibaut, B. I., Dewa, L. H., Ramtale, C., D'Lima, D., Simpson, A., ... & Darzi, A. (2020). Barriers and facilitators to incident reporting in mental healthcare settings: A qualitative study. *Journal of Psychiatric and Mental Health Nursing*, *27*(3), 211-223.

Arnetz, J. E., Hamblin, L., Ager, J., Luborsky, M., Upfal., M. J., Russell, J., & Essenmacher, L. (2015). Underreporting of workplace violence: comparison of self-report and actual documentation of hospital incidents. *Workplace health & safety*, *63*(5), 200-210.

Astuti, R., Tahir, T., Kadar, K. S., & Erfina, E. (2021). Factors related to the Incident Reporting Culture in Health Services: A Literature Review. *STRADA: Jurnal Ilmiah Kesehatan*, *10*(1), 1306-1310.

Augustine, L. G. (2024). Investigating electronic incident reporting systems and its role within healthcare to improve patient safety: an integrative literature review. *Int J Bus Admin*, *15*, 82-8.

Austin, P., Macleod, R., Siddall, P., McSherry, W., & Egan, R. (2017). Spiritual care training is needed for clinical and non-clinical staff to manage patients' spiritual needs. *Journal for the Study of Spirituality*, *7*(1), 50-63.

Badr, H., Salim, Z., & Kamal., S. (2019). The impact of workload on incident reporting in UAE hospitals. Journal of Patient Safety, 15(1), 55–62.

Baker, G. R., Norton, P. G., Flintoft, V., Blais, R., Brown, A., Cox, J., ... & Tamblyn, R. (2004). The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *Cmaj*, *170*(11), 1678-1686.

Barach, P., & Small, S. D. (2000). Reporting and preventing medical mishaps: lessons from non-medical near miss reporting systems. *Bmj*, *320*(7237), 759-763

Basu, A., Gopinath, D., Anjum, N., & Hotchkies, S. (2009). Feedback in incident reporting–more needed. *Clinical Governance: An International Journal., 14*(1), 38-41.

Bates, D. W., Singh, H., & Sheikh, A. (2016). Cultural diversity and patient safety in the UAE. Health Affairs, 35(4), 676–683.

Benn, J., Burnett, S., & Parand, A. (2015). Leadership's role in patient safety. International Journal of Health Care Quality Assurance, 28(2), 158–172.

Benn, J., Koutantji, M., Wallace, L., Spurgeon, P., Rejman, M., Healey, A., & Vincent, C. (2009). Feedback from incident reporting: information and action to improve patient safety. *BMJ Quality & Safety*, *18*(1), 11-21.

Berwick, D. M. (2016). Era 3 for medicine and health care. JAMA, 315(13), 1329–1330.

Bismark, M. M., Brennan, T. A., Paterson, R. J., Davis, P. B., & Studdert, D. M. (2006). Relationship between complaints and quality of care in New Zealand: a descriptive

analysis of complainants and non-complainants following adverse events. *BMJ Quality & Safety*, *15*(1), 17-22.

Blair, I., & Sharif, A. (2013). Health and health systems performance in the United Arab Emirates. In *Papers from the 38th IHF World Hospital Congress in Oslo* (Vol. 49, No. 4, p. 412).

Bolsin, S., Patrick, A., Creati, B., Colson, M., & Freestone, L. (2004). Electronic incident reporting and professional monitoring transforms culture. *BMJ: British Medical Journal., 329*(7456), 51.

Bovis, J. L., Edwin, J. P., Bano, C. P., Tyraskis, A., Baskaran, D., & Karuppaiah, K. (2018). Barriers to staff reporting adverse incidents in NHS hospitals. *Future Healthcare Journal., 5*(2), 117.

Brabcova, I., Hajduchová, H., Tóthová, V., Chloubová, I., Červený, M., Prokešová, R., ... & O'Hara, S. (2023). Reasons for medication administration errors, barriers to reporting them and the number of reported medication administration errors from the perspective of nurses: A cross-sectional survey. *Nurse Education in Practice*, *70*, 103642.

Braithwaite, J., Westbrook, M., & Travaglia, J. (2008). Attitudes toward the large-scale implementation of an incident reporting system. *International journal for quality in health care*, *20*(3), 184-191.

Braithwaite, J., Westbrook, M. T., Travaglia, J. F., & Hughes, C. (2010). Cultural and associated enablers of, and barriers to, adverse incident reporting. *BMJ Quality & Safety*, *19*(3), 229-233.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brennan, T. A., Leape, L. L., Laird, N. M., Hebert, L., Localio, A. R., Lawthers, A. G., ... & Hiatt, H. H. (2004). Incidence of adverse events and negligence in hospitalized patients: results of the Harvard Medical Practice Study I. *BMJ Quality & Safety*, *13*(2), 145-151.

Britain, G. (2015). *Culture change in the NHS: applying the lessons of the Francis inquiries*. Stationery Office.

Brubacher, J. R., Hunte, G. S., Hamilton, L., & Taylor, A. (2011). Barriers to and incentives for safety event reporting in emergency departments. *Healthc Q*, *14*(3), 57-65.

Brunsveld-Reinders, A. H., Arbous, M. S., De Vos, R., & De Jonge, E. (2016). Incident and error reporting systems in intensive care: a systematic review of the literature. *International Journal for Quality in Health Care*, *28*(1), 2-13.

Cappelen, K., Harris, I., & Aase, K. (2016). Incident reporting practices in healthcare: Exploring cultural differences. Safety Science, 89, 149–156.

Carroll, R., et al. (2017). Automation in incident reporting systems. Journal of Patient Safety, 13(3), 140-147.

Cerrone, V., Aliberti, S. M., Prendin, A., Ilardi, B., Funk, R. H., Andretta, V., & Capunzo, M. (2023). How Patient Safety Culture Influences Adverse Event Reporting and Use of the Incident Reporting Tool: A Systematic Review.

Chassin, M.R. and Loeb, J.M. (2013), High-Reliability Health Care: Getting There from Here. Milbank Quarterly, 91: 459-490. https://doi.org/10.1111/1468-0009.12023

Chiang, H. Y., & Pepper, G. A. (2006). Barriers to nurses' reporting of medication errors in Taiwan. Journal of Nursing Scholarship, 38(4), 392–399.

Chiang, H. Y., Lin, S. Y., Hsu, S. C., & Ma, S. C. (2010). Factors determining hospital nurses' failures in reporting medication errors in Taiwan. *Nursing outlook*, *58*(1), 17-25.

Chiang, H. Y., Lee, H. F., Lin, S. Y., & Ma, S. C. (2019). Factors contributing to voluntariness of incident reporting among hospital nurses. *Journal of nursing management*, *27*(4), 806-814.

Choy, C. Y. (2008). Critical incident monitoring in anaesthesia. *Current Opinion in Anesthesiology*, *21*(2), 183-186.

Christiaans-Dingelhoff, I., Smits, M., Zwaan, L., Lubberding, S., Van Der Wal, G., & Wagner, C. (2011). To what extent are adverse events found in patient records reported by patients and healthcare professionals via complaints, claims and incident reports?. *BMC health services research*, *11*(1), 49.

Clarke, J. R., Lerner, J. C., & Marella, W. (2017). The role of technology in incident reporting. BMJ Quality & Safety, 26(9), 750–756.

Clarke, S., & Aiken, L. H. (2008). Organizational culture and patient safety outcomes. Health Care Management Review, 33(3), 217–224.

Classen, D. C., Resar, R., & Griffin, F. (2011). Global trends in adverse event reporting. Health Affairs, 30(4), 581–589.

Clay-Williams, R., Taylor, N., Ting, H. P., Arnolda, G., Winata, T., & Braithwaite, J. (2020). Do quality management systems influence clinical safety culture and leadership? A study in 32 Australian hospitals. *International journal for quality in health care : journal of the International Society for Quality in Health Care*, *32*(Supplement_1), 60–66. https://doi.org/10.1093/intqhc/mzz107

Coles, G., Fuller, B., Nordquist, K., Weissenberger, S., Anderson, L., & DuBois, B. (2010). Three kinds of proactive risk analyses for health care. *The Joint Commission Journal on Quality and Patient Safety*, *36*(8), 365-AP3.

Cooper, J., Edwards, A., Williams, H., Sheikh, A., Parry, G., Hibbert, P., Butlin, A., Donaldson, L., & Carson-Stevens, A. (2017). Nature of Blame in Patient Safety Incident Reports: Mixed Methods Analysis of a National Database. *Annals of family medicine*, *15*(5), 455–461. https://doi.org/10.1370/afm.2123

Coyle, J., & Battles, J. B. (1999). Patient safety and medical error reporting systems. Quality in Health Care, 8(3), 167–175.

Crunden, E. A., Worsley, P. R., Coleman, S. B., & Schoonhoven, L. (2022). Barriers and facilitators to reporting medical device-related pressure ulcers: A qualitative exploration of international practice. *International journal of nursing studies*, *135*, 104326. https://doi.org/10.1016/j.ijnurstu.2022.104326

Davis, P., Lay-Yee, R., Briant, R., Ali, W., Scott, A., & Schug, S. (2002). Adverse events in New Zealand public hospitals I: occurrence and impact. *The New Zealand Medical Journal (Online)*, *115*(1167).

Davis, P., Lay-Yee, R., Briant, R., Ali, W., Scott, A., & Schug, S. (2003). Adverse events in New Zealand public hospitals II: preventability and clinical context. *The New Zealand Medical Journal (Online)*, *116*(1183).

Dekker, S. (2012). Just Culture: Balancing Safety and Accountability (2nd ed.). CRC Press. https://doi.org/10.4324/9781315251271

De la Torre-Pérez, L., Granés, L., Marín, A. P., & Bertran, M. J. (2023). A hospital incident reporting system (2016–2019): Learning from notifier's perception on incidents' risk, severity and frequency of adverse events. *Journal of Healthcare Quality Research*, *38*(2), 93-104.

De Landre, J., Gibb, G., & Walters, N. (2006). Using incident investigation tools proactively for incident prevention. In *Australian & New Zealand Societies of Air Safety Investigators Conference 2006*.

De Vries, E. N., Ramrattan, M. A., Smorenburg, S. M., Gouma, D. J., & Boermeester, M. A. (2008). The incidence and nature of in-hospital adverse events: a systematic review. *BMJ Quality & Safety*, *17*(3), 216-223.

Devkaran, S. (2014). *International healthcare accreditation: An analysis of clinical quality and patient experience in the UAE* (Doctoral dissertation, Heriot-Watt University).

DHA. (2018). Dubai Health Strategy 2021. Dubai Health Authority.

Dhamanti, I. (2017). *Under-reporting of patient safety incidents in Indonesian hospitals: a mixed-methods study* (Doctoral dissertation, La Trobe).

Dhamanti, I., Leggat, S., Barraclough, S., & Tjahjono, B. (2019). Patient Safety Incident Reporting In Indonesia: An Analysis Using World Health Organization Characteristics For Successful Reporting. *Risk management and healthcare policy*, *12*, 331–338. https://doi.org/10.2147/RMHP.S222262

Dhamanti, I., Leggat, S., & Barraclough, S. (2020). Practical and cultural barriers to reporting incidents among health workers in Indonesian public hospitals. *Journal of Multidisciplinary Healthcare*, 351-359.

Dhamanti, I., Leggat, S., Barraclough, S., & Rachman, T. (2022). Factors contributing to under-reporting of patient safety incidents in Indonesia: leaders' perspectives. *F1000Research*, *10*, 367.

Diamantopoulos, A., & Siguaw, J. A. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British Journal of Management, 17*(4), 263–282. https://doi.org/10.1111/j.1467-8551.2006.00500.x

Djarv, T. (2024). Ten years of incident reports on in-hospital cardiac arrest–Are they useful for improvements?. *Resuscitation Plus*, *17*, 100525.

Dodds, A., & Kodate, N. (2012). Understanding institutional conversion: the case of the National Reporting and Learning System. *Journal of Public Policy*, *32*(2), 117-139.

Eadie, A. (2012). Medical error reporting should it be mandatory in Scotland?. *Journal of forensic and legal medicine*, *19*(7), 437-441.

Edrees, H. H., Ismail, M. N. M., Kelly, B., Goeschel, C. A., Berenholtz, S. M., Pronovost, P. J., ... & Weaver, S. J. (2017). Examining influences on speaking up among critical care

healthcare providers in the United Arab Emirates. *International Journal for Quality in Health Care*, *29*(7), 948-960.

Elmi, A. H., Hassan, R. A., Abdi, A. O., Yusuf, F. Y., HassanIbrahim, K., & Abdi, A. A. (2025). Awareness of reporting practices and barriers to incident reporting among nurses in Mogadishu, Somalia. *BMC nursing*, *24*(1), 1134. https://doi.org/10.1186/s12912-025-03799-y

Elmontsri, M., Banarsee, R., & Majeed, A. (2017). Barriers to incident reporting in multicultural settings. BMJ Open, 7(11), e016293.

Elmontsri, M., et al. (2018). Multilingual training programs for incident reporting in the UAE. Nurse Education Today, 66, 15-21.

El-Jardali, F., Jaafar, M., Dimassi, H., Jamal, D., & Hamdan, R. (2010). The current state of patient safety culture in Lebanese hospitals: a study at baseline. *International Journal for Quality in Health Care*, *22*(5), 386-395.

Etchegaray, J. M., Gallagher, T. H., Bell, S. K., Dunlap, B., & Thomas, E. J. (2012). Error disclosure: a new domain for safety culture assessment. *BMJ quality & safety*, *21*(7), 594-599.

Evans, S. M., Berry, J. G., & Smith, B. J. (2006). Attitudes and barriers to incident reporting. BMJ Quality & Safety, 15(1), 39–43.

Evans, S. M., Smith, B. J., Esterman, A., Runciman, W. B., Maddern, G., Stead, K., ... & Jones, S. (2007). Evaluation of an intervention aimed at improving voluntary incident reporting in hospitals. *BMJ Quality & Safety*, *16*(3), 169-175.

Farag, A., et al. (2020). Feedback mechanisms in incident reporting systems. Patient Safety Journal., 4(1), 11-18.

Fekadu, G., Tobiano, G., Muir, R., Engidaw, M. T., & Marshall, A. P. (2025). Factors influencing patient safety incident reporting in African healthcare organisations: a systematic integrative review. *BMC Health Services Research*, *25*(1), 619.

Ferorelli, D., Solarino, B., Trotta, S., Mandarelli, G., Tattoli, L., Stefanizzi, P., ... & Dell'Erba, A. (2020). Incident reporting system in an Italian university hospital: a new tool for improving patient safety. *International journal of environmental research and public health*, *17*(17), 6267.

Firth-Cozens, J. (2001). Cultures for improving patient safety through learning: The role of teamwork. Quality in Health Care, 10(4), 26-31.

Flanagan, E., Chadwick, R., Goodrich, J., Ford, C., & Wickens, R. (2020). Reflection for all healthcare staff: a national evaluation of Schwartz rounds. *Journal of interprofessional care*, *34*(1), 140-142.

Flin, R., & Yule, S. (2004). Leadership for safety: Industrial experience. Quality and Safety in Health Care, 13(Suppl 2), ii45–ii51.

Flott, K., Nelson, D., Moorcroft, T., Mayer, E. K., Gage, W., Redhead, J., & Darzi, A. W. (2018). Enhancing safety culture through improved incident reporting: a case study in translational research. *Health Affairs*, *37*(11), 1797-1804.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.1177/002224378101800104

Francis, R. (2013). The Mid Staffordshire NHS Foundation Trust Public Inquiry: Final Report. Department of Health.

Gampetro, P. J., Nickum, A., & Schultz, C. M. (2024). Perceptions of US And UK Incident reporting systems: A scoping review. *Journal of Patient Safety*, *20*(5), 360-369.

Ghorbanian, A. (2013). Comparison of work-family conflict between clinical and non clinical staffs of Shahid Faghihi Hospital (public hospital) in Shiraz: 2010. *Iran Occupational Health*, *10*(3), 52-60.

Gifford, M. L., & Anderson, J. E. (2010). Barriers and motivating factors in reporting incidents of assault in mental health care. *Journal of the American Psychiatric Nurses Association*, *16*(5), 288-298.

Ginsburg, L. R., Chuang, Y. T., Berta, W. B., Norton, P. G., Ng, P., Tregunno, D., & Richardson, J. (2010). The relationship between organizational leadership for safety and learning from patient safety events. *Health services research*, *45*(3), 607–632. https://doi.org/10.1111/j.1475-6773.2010.01102.x

Goekcimen, K., Schwendimann, R., Pfeiffer, Y., Mohr, G., Jaeger, C., & Mueller, S. (2023). Addressing Patient Safety Hazards Using Critical Incident Reporting in Hospitals: A Systematic Review. *Journal of patient safety*, *19*(1), e1–e8. https://doi.org/10.1097/PTS.0000000000001072

Gong, Y., Kang, H., Wu, X., & Hua, L. (2017). Enhancing patient safety event reporting. *Applied clinical informatics*, *8*(03), 893-909.

Gong, Y. (2011). Data consistency in a voluntary medical incident reporting system. *Journal of medical systems*, *35*(4), 609-615.

Gqaleni TMH, Mkhize SW (2024) Barriers to implementing patient safety incident reporting and learning guidelines in specialised care units, KwaZulu-Natal: A qualitative study. PLoS ONE 19(3): e0289857. https://doi.org/10.1371/journal.pone.0289857

Greenberg, C. C., Regenbogen, S. E., & Studdert, D. M. (2007). Patterns of communication breakdowns resulting in injury to surgical patients. Journal of the American College of Surgeons, 204(4), 533–540.

Gronewold, U., Gold, A., & Salterio, S. E. (2013). Reporting self-made errors: The impact of organizational error-management climate and error type. *Journal of business ethics*, *117*(1), 189-208.

HAAD. (2017). Abu Dhabi Healthcare Quality Index. Health Authority Abu Dhabi.

Haller, G., Myles, P. S., Stoelwinder, J., Langley, M., Anderson, H., & McNeil, J. (2007). Integrating incident reporting into an electronic patient record system. *Journal of the American Medical Informatics Association*, *14*(2), 175-181.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). SAGE Publications.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Danks, N. P. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer. https://doi.org/10.1007/978-3-030-80519-7

Harada, M. D. J. C. S., Silva, A. E. B. D. C., Feldman, L. B., Tavares, S. S., Gerhardt, L. M., Lima Júnior, A. J. D., & Kolankiewicz, A. C. B. (2021). Reflexões sobre sistemas de notificação de incidentes de segurança do paciente. *Revista Brasileira de Enfermagem*, *74*, e20200307.

Harris, C. B., Krauss, M. J., Coopersmith, C. M., Avidan, M., Nast, P. A., Kollef, M. H., ... & Fraser, V. J. (2007). Patient safety event reporting in critical care: a study of three intensive care units. *Critical care medicine*, *35*(4), 1068-1076.

Hartnell, N., MacKinnon, N., Sketris, I., & Fleming, M. (2012). Identifying, understanding and overcoming barriers to medication error reporting in hospitals: a focus group study. *BMJ quality & safety*, *21*(5), 361-368.

Hamed, M. M. M., & Konstantinidis, S. (2022). Barriers to incident reporting among nurses: a qualitative systematic review. *Western journal of nursing research*, *44*(5), 506-523.

Han, N., Jeong, S. H., Lee, M. H., & Kim, H. S. (2024). Impacts of Just Culture on Perioperative Nurses' Attitudes and Behaviors With Regard to Patient Safety Incident Reporting: Cross-Sectional Nationwide Survey. *Asian Nursing Research*, *18*(4), 323-330.

Heard, G. C., Sanderson, P. M., & Thomas, R. D. (2012). Barriers to adverse event and error reporting in anesthesia. *Anesthesia & Analgesia*, *114*(3), 604-614.

Hebballi, N. B., Kilcullen, M. P., Broussard, M., Ottosen, M. J., Thomas, E. J., Salas, E., & Tsao, K. (2024). Attending physicians and trainees' perspective of patient safety culture in operating room: A mixed methods study. *Journal of Pediatric Surgery Open*, *7*, 100152.

Henriksen, K., Dayton, E., & Keyes, M. A. (2008). Understanding adverse events: A human factors framework. BMJ Quality & Safety, 17(1), 1–8.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hewitt, T., Chreim, S., & Forster, A. (2016). Incident reporting systems: a comparative study of two hospital divisions. *Archives of Public Health*, *74*(1), 34.

Hewitt, T., Chreim, S., & Forster, A. (2017). Sociocultural factors influencing incident reporting among physicians and nurses: understanding frames underlying self-and peer-reporting practices. *Journal of patient safety*, *13*(3), 129-137.

Hibbert, P. D., Molloy, C. J., Schultz, T. J., Carson-Stevens, A., & Braithwaite, J. (2023). Comparing rates of adverse events detected in incident reporting and the Global Trigger Tool: a systematic review. *International journal for quality in health care : journal of the International Society for Quality in Health Care*, *35*(3), mzad056. https://doi.org/10.1093/intqhc/mzad056

Hor, S. Y., Iedema, R., Williams, K., White, L., Kennedy, P., & Day, A. S. (2010). Multiple accountabilities in incident reporting and management. *Qualitative Health Research*, *20*(8), 1091-1100.

Howell, A. M., Burns, E. M., Bouras, G., Donaldson, L. J., Athanasiou, T., & Darzi, A. (2015). Can Patient Safety Incident Reports Be Used to Compare Hospital Safety? Results from a Quantitative Analysis of the English National Reporting and Learning System Data. *PloS one*, *10*(12), e0144107. https://doi.org/10.1371/journal.pone.0144107

Howell, A.-M., Burns, E. M., Hull, L., & Darzi, A. (2017). Increasing incident reporting rates in healthcare. BMC Health Services Research, 17(1), 1–7.

Howell, A.-M., Burns, E. M., Hull, L., Mayer, E., Sevdalis, N., & Darzi, A. (2017). The impact of healthcare incident reporting systems. BMC Health Services Research, 17, 7-14.

Hutchinson, A., Young, T. A., Cooper, K. L., McIntosh, A., Karnon, J. D., Scobie, S., & Thomson, R. G. (2009). Trends in healthcare incident reporting and relationship to safety and quality data in acute hospitals: results from the National Reporting and Learning System. *BMJ Quality & Safety*, *18*(1), 5-10.

Hwang, J. I., Lee, S. I., & Park, H. A. (2012). Barriers to the operation of patient safety incident reporting systems in Korean general hospitals. *Healthcare informatics research*, *18*(4), 279-286.

Idilbi, N., Dokhi, M., Malka-Zeevi, H., & Rashkovits, S. (2023). The relationship between patient safety culture and the intentions of the nursing staff to report a near-miss event during the COVID-19 crisis. *Journal of Nursing Care Quality*, *38*(3), 264-271.

Indriani, M., Kusumapradja, R., & Anindita, R. (2022). Leadership Style, Blame Culture, and Perceived Organizational Support for Patient Safety Incident Reporting at RSIA at Jakarta. *European Journal of Business and Management Research*, *7*(6), 304-312.

Jafree, S. R., Zakar, R., Zakar, M. Z., & Fischer, F. (2015). Nurse perceptions of organizational culture and its association with the culture of error reporting: a case of public sector hospitals in Pakistan. *BMC health services research*, *16*(1), 3.

Jäger, C., Mohr, G., Gökcimen, K., Navarini, A., Schwendimann, R., & Müller, S. (2021). Critical incident reporting over time: a retrospective, descriptive analysis of 5493 cases. *Swiss medical weekly*, *151*, w30098. https://doi.org/10.4414/smw.2021.w30098

Janakiraman, R., Parish, J. T., & Berry, L. L. (2011). The effect of the work and physical environment on hospital nurses' perceptions and attitudes: Service quality and commitment. *Quality Management Journal., 18*(4), 36-49.

Jang, S. G., Ock, M., & Kim, S. (2024). Qualitative Comparison of Perceptions Regarding Patient Engagement for Patient Safety by Physicians, Nurses, and Patients. *Patient Preference and Adherence*, *18*, 1065–1075. https://doi.org/10.2147/PPA.S456050

Jahromi Z. B., Parandavar N., & Rahmanian S. (2014). Investigating factors associated with not reporting medical errors from the medical team's point of view in Jahrom, Iran. *Global Journal of Health Science*, 6(6), 96–104. https://doi.org/10.5539/gjhs.v6n6p96

JCI. (2021). Joint Commission International Accreditation Standards for Hospitals. JCI.

Johnstone, M. J., & Kanitsaki, O. (2006). Culture, language, and patient safety: making the link. *International journal for quality in health care*, *18*(5), 383-388.

Johansen, L. T., Braut, G. S., Acharya, G., Andresen, J. F., & Øian, P. (2021). Adverse events reporting by obstetric units in Norway as part of their quality assurance and patient safety work: an analysis of practice. *BMC Health Services Research*, *21*(1), 931.

Jones, A., Kelly, D., & Hood, K. (2018). Barriers to incident reporting among healthcare workers. Nursing Standard, 33(15), 39-46.

Kaldjian, L. C., Forman-Hoffman, V. L., & Jones, E. W. (2008). The ethical dimensions of reporting errors. Journal of General Internal Medicine, 23(7), 962–967.

Kaldjian, L. C., Jones, E. W., Wu, B. J., Forman-Hoffman, V. L., Levi, B. H., & Rosenthal., G. E. (2008). Reporting medical errors to improve patient safety: a survey of physicians in teaching hospitals. *Archives of internal medicine*, *168*(1), 40–46. https://doi.org/10.1001/archinternmed.2007.12

Kakemam, E., Kalhor, R., Khakdel, Z., Khezri, A., West, S., Visentin, D., & Cleary, M. (2019). Occupational stress and cognitive failure of nurses and associations with self-reported adverse events: A national cross-sectional survey. *Journal of advanced nursing*, *75*(12), 3609-3618.

Kakemam, E., Albelbeisi, A. H., Davoodabadi, S., Azarmi, M., Zolghadr, F., & Mamene, M. (2022). The impact of nurses' perceptions of systems thinking on occurrence and reporting of adverse events: A Cross-Sectional study. *Journal of nursing management*, *30*(2), 482-490.

Kakemam, E., Albelbeisi, A. H., Rouzbahani, M., Gharakhani, M., Zahedi, H., & Taheri, R. (2024). Nurses' perceptions of patient safety competency: a cross-sectional study of relationships with occurrence and reporting of adverse events. *Plos one*, *19*(1), e0297185.

Kakemam, E., Hajizadeh, A., Azarmi, M., Zahedi, H., Gholizadeh, M., & Roh, Y. S. (2021). Nurses' perception of teamwork and its relationship with the occurrence and reporting of adverse events: A questionnaire survey in teaching hospitals. *Journal of Nursing Management*, *29*(5), 1189-1198.

Kapil, S., & Anoopjit, K. (2020). A Study to Assess the Knowledge, Attitude and Perceived Barriers on Incident Reporting among Staff Nurses Working in a Tertiary Care Hospital., Ludhiana, Punjab. International Journal of Nursing Education, 12, 142-145.

Kaya, S., Goncuoglu, M. B., Mete, B., Asilkan, Z., Mete, A. H., Akturan, S., ... & Gumus, R. (2023). Patient safety culture: effects on errors, incident reporting, and patient safety grade. *Journal of patient safety*, *19*(7), 439-446.

Keles, P. U., & Aydin, S. (2021). University Students' Perceptions about Artificial Intelligence. *Shanlax International Journal of Education*, *9*, 212-220.

Kelly, N., Blake, S., & Plunkett, A. (2016). Learning from excellence in healthcare: a new approach to incident reporting. *Archives of Disease in Childhood*, *101*(9), 788-791.

Khan, T. M. (2013). Community pharmacists' knowledge and perceptions about adverse drug reactions and barriers towards their reporting in Eastern region, Alahsa, Saudi Arabia. *Therapeutic advances in drug safety*, *4*(2), 45-51.

Khan, M., et al. (2019). Interprofessional collaboration in patient safety. Journal of Interprofessional Care, 33(3), 320-328.

Khatri, N., Brown, G. D., & Hicks, L. L. (2009). From a blame culture to a just culture in health care. *Health care management review*, *34*(4), 312-322.

Kim, E., & Yu, J. (2021). Factors affecting willingness to medical error-reporting of nursing students. *Journal of Korean Academy of Nursing Administration*, *28*(4), 440-450.

Kim, N. Y., & Kwak, S. J. (2024). Relationship between nurses' critical thinking disposition and patient safety incident reporting: The mediating role of patient safety culture in a comprehensive nursing service ward. *PloS One*, *19*(12), e0315679.

Kingston, M. J., Evans, S. M., Smith, B. J., & Berry, J. G. (2004). Attitudes of doctors and nurses towards incident reporting: a qualitative analysis. *Medical Journal of Australia*, *181*(1), 36-39.

Kirk, S., Parker, D., & Claridge, T. (2007). Feedback in incident reporting systems. Journal of Patient Safety, 3(1), 42–48.

Klazinga, N., & Slawomirski, L. (2022). The economics of patient safety: From analysis to action. *OECD Health Working Papers*, 145, 1–72. https://doi.org/10.1787/761f2da8-en

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration, 11*(4), 1–10. https://doi.org/10.4018/ijec.2015100101

Kodate, N., Taneda, K. I., Yumoto, A., & Sugiyama, Y. (2021). The role of incident-reporting systems in improving patient safety in Japanese hospitals: a comparative perspective.

In *Humans and Devices in Medical Contexts: Case Studies from Japan* (pp. 167-196). Singapore: Springer Singapore.

Kodate, N., Taneda, K. I., Yumoto, A., & Kawakami, N. (2022). How do healthcare practitioners use incident data to improve patient safety in Japan? A qualitative study. *BMC Health Services Research*, *22*(1), 241.

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (2000). To err is human: Building a safer health system. National Academy Press.

Koornneef, E., Robben, P., & Blair, I. (2017). Progress and outcomes of health systems reform in the United Arab Emirates: a systematic review. *BMC health services research*, *17*(1), 672.

Kosiek, K., Depta, A., Staniec, I., Wensing, M., Godycki-Cwirko, M., & Kowalczyk, A. (2021). The Perception of Patient Safety Strategies by Primary Health Professionals. *International Journal of Environmental Research and Public Health*, *18*(3), 1063. https://doi.org/10.3390/ijerph18031063

Koskiniemi S, Syyrilä T, Hämeen-Anttila K, Mikkonen S, Manias E, Rafferty AM, Härkänen M (2024). Patient safety incident reporting software: a cross-sectional survey of nurses and other users' perspectives. J Adv Nurs https://doi.org/10.1111/jan.16364

Kreckler, S., Catchpole, K., & Bottomley, M. (2009). Factors influencing incident reporting in surgical care. The Journal of Patient Safety, 5(2), 75–80.

Kumah, A., Zon, J., Obot, E., Yaw, T. K., Nketsiah, E., & Bobie, S. A. (2024). Using incident reporting systems to improve patient safety and quality of care. *Global Journal on Quality and Safety in Healthcare*, *7*(4), 228-231.

Kumar, S., & Bhalla, P. (2024). Impact Of Organizational Risk Management Policies And Procedures On Incident Reporting Behavior Of Staff: A Perceptive Study In The UAE. *Frontiers in Health Informatics*, *13*(5).

Kouvo, J., Koponen, S., Kuusisto, H., & Saranto, K. (2020). Health Professionals' Perceptions and Reactions to ICT-Related Patient Safety Incidents. In *Integrated Citizen Centered Digital Health and Social Care* (pp. 102-106). IOS Press.

Kurihara, M., Watari, T., Rohde, J. M., Gupta, A., Tokuda, Y., & Nagao, Y. (2022). Nationwide survey on Japanese residents' experience with and barriers to incident reporting. *Plos one*, *17*(12), e0278615.

Kusano, A. S., Nyflot, M. J., Zeng, J., Sponseller, P. A., Ermoian, R., Jordan, L., ... & Ford, E. C. (2015). Measurable improvement in patient safety culture: A departmental experience with incident learning. *Practical Radiation Oncology*, *5*(3), e229-e237.

Kuo, Y. H., Lee, T. T., Mills, M. E., & Lin, K. C. (2012). The evaluation of a web-based incident reporting system. *CIN: Computers, Informatics, Nursing*, *30*(7), 386-394.

Latif, R., et al. (2021). Anonymous reporting systems and their impact on reporting rates. BMJ Open, 11(6), e045678.

Lawton, R., & Parker, D. J. B. Q. (2002). Barriers to incident reporting in a healthcare system. *BMJ Quality & Safety*, *11*(1), 15-18.

Leape, L. L., & Berwick, D. M. (2005). Five years after to err is human: What have we learned? JAMA, 293(19), 2384–2390.

Lee, W., Kim, S. Y., Lee, S. I., Lee, S. G., Kim, H. C., & Kim, I. (2018). Barriers to reporting of patient safety incidents in tertiary hospitals: A qualitative study of nurses and resident physicians in South Korea. *The International journal of health planning and management*, *33*(4), 1178–1188. https://doi.org/10.1002/hpm.2616

Lee, H., Choi, J., & Kim, S. (2020). Mobile applications for incident reporting. Healthcare Informatics Research, 26(2), 101–108.

Lee, Y. H., Yang, C. C., & Chen, T. T. (2016). Barriers to incident-reporting behavior among nursing staff: A study based on the theory of planned behavior. *Journal of Management & Organization*, *22*(1), 1-18.

Leon, C., Hogan, H., & Jani, Y. H. (2024). Seeking systems-based facilitators of safety and healthcare resilience: a thematic review of incident reports. *International Journal for Quality in Health Care*, *36*(3), mzae057.

Levinson, D. R., & General, I. (2012). INCIDENT REPORTING SYSTEMS DO NOT CAPTURE MOST PATIENT HARM.

Le Duff, F., Daniel, S., Kamendjé, B., Le Beux, P., & Duvauferrier, R. (2005). Monitoring incident report in the healthcare process to improve quality in hospitals. *International journal of medical informatics*, *74*(2-4), 111-117.

Li, L., Badgery-Parker, T., Merchant, A., Fitzpatrick, E., Raban, M. Z., Mumford, V., ... & Westbrook, J. I. (2024). Paediatric medication incident reporting: a multicentre comparison study of medication errors identified at audit, detected by staff and reported to an incident system. *BMJ Quality & Safety*, *33*(10), 624-633.

Liukka, M., Hupli, M., & Turunen, H. (2019). Problems with incident reporting: Reports lead rarely to recommendations. *Journal of clinical nursing*, *28*(9-10), 1607-1613.

Loutfi, S. A., Jose, S., Jabeen, F., & Piccardi, P. (2025). A stimulus-organism-response (SOR) perspective on healthcare telemedicine usage towards sustainable development. *Management of Environmental Quality: An International Journal*.

Machen, S., Jani, Y., Turner, S., Marshall, M., & Fulop, N. J. (2019). The role of organizational and professional cultures in medication safety: a scoping review of the literature. *International Journal for Quality in Health Care*, *31*(10), G146-G157.

Macrae, C. (2016). Learning from incident reporting. Social Science & Medicine, 181, 45–52.

Malik, M. R., Alam, A. Y., Mir, A. S., Malik, G. M., & Abbas, S. M. (2010). Attitudes and perceived barriers of tertiary level health professionals towards incident reporting in Pakistan. *North American Journal of medical sciences*, *2*(2), 100.

Makary, M. A., & Daniel, M. (2016). Medical error—the third leading cause of death in the US. BMJ, 353, i2139.

Mamukuyomi, S. S. (2025). Safety Culture and Incident Reporting in Developing Countries: An Empirical Analysis. *INTERNATIONAL JOURNAL OF AGEING, SAFETY, HEALTHCARE & SCIENCE INNOVATION*, *2*(1), 150-157.

Manser, T., Imhof, M., Lessing, C., & Briner, M. (2017). A cross-national comparison of incident reporting systems implemented in German and Swiss hospitals. *International Journal for Quality in Health Care*, *29*(3), 349-359.

Mansouri, A., Ahmadvand, A., Hadjibabaie, M., Javadi, M., Khoee, S. H., Dastan, F., & Gholami, K. (2014). A review of medication errors in iran: sources, underreporting reasons and preventive measures. *Iranian journal of pharmaceutical research: IJPR*, *13*(1), 3.

Markes, A. R., & Diab, M. (2021). Voluntary Incident Reporting in Health Care: Genesis, Challenges, and Opportunity. *JBJS*, 10-2106.

Marx, D. (2001). Patient safety and the "just culture." Nursing Administration Quarterly, 25(3), 77–86.

Milch, C. E., Salem, D. N., Pauker, S. G., Lundquist, T. G., Kumar, S., & Chen, J. (2006). Voluntary electronic reporting of medical errors and adverse events: an analysis of 92,547 reports from 26 acute care hospitals. *Journal of general internal medicine*, *21*(2), 165-170.

Mills, D. H. (1978). Medical insurance feasibility study: A technical summary. Western Journal of Medicine, 128(4), 360–365.

Ministry of Health and Prevention, UAE. (2021). Annual Health Report 2021. MOHAP.

Ministry of Foreign Affairs, United Arab Emirates. (n.d.). Health Care. In *UAE embassy in Paris – The UAE*. Retrieved [Sep, 24, 2024], from https://www.mofa.gov.ae/en/Missions/Paris/The-UAE/Health-Care

Mitchell, I., Schuster, A., Smith, K., Pronovost, P., & Wu, A. (2016). Patient safety incident reporting: a qualitative study of thoughts and perceptions of experts 15 years after 'To Err is Human'. *BMJ quality & safety*, *25*(2), 92-99.

Mitchell, I., Schuster, A., & Smith, K. (2016). Patient safety incident reporting: Barriers and motivators for reporting incidents. BMJ Quality & Safety, 25(5), 395–402.

Moeller, A. D., Rasmussen, K., & Nielsen, K. J. (2016). Learning and feedback from the Danish patient safety incident reporting system can be improved. *Dan Med J*, *63*(6), 1-5.

Mohamed, M. F., Abubeker, I. Y., Al-Mohanadi, D., Al-Mohammed, A., Abou-Samra, A. B., & Elzouki, A. N. (2021). Perceived barriers of incident reporting among internists: Results from Hamad Medical Corporation in Qatar. *Avicenna journal of medicine*, *11*(03), 139-144.

Murff, H. J., Patel, V. L., Hripcsak, G., & Bates, D. W. (2003). Detecting adverse events for patient safety research: a review of current methodologies. *Journal of biomedical informatics*, *36*(1-2), 131-143.

Najafpour, Z., Arab, M., Yaseri, M., Hatamizadeh, M., Goudarzi, Z., Bahramnezhad, F., & Shayanfard, K. (2020). Understanding the Barriers to Nurses Error Reporting and Disclosure: A Mixed Methods Study.

Najjar, S., Nafouri, N., Vanhaecht, K., & Euwema, M. (2015). The relationship between patient safety culture and adverse events: a study in Palestinian hospitals. *Safety in Health*, *1*(1), 16.

Namadi, F., Alilu, L., & Habibzadeh, H. (2024). Nurses' experiences of reporting the medical errors of their colleagues: a qualitative study. *BMC nursing*, *23*(1), 415.

Nazário, S. D. S., Cruz, E. D. D. A., Paes, R. G., Mantovani, M. D. F., & Seiffert, L. S. (2021). Facilitating and hindering factors for reporting adverse events: an integrative review. *Acta Paulista de Enfermagem*, *34*, eAPE001245.

Nieva, V. F., & Sorra, J. (2003). Safety culture assessment: a tool for improving patient safety in healthcare organizations. *BMJ quality & safety*, *12*(suppl 2), ii17-ii23.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1–13. https://doi.org/10.1177/1609406917733847

Ntlanganiso, L. (2022). Challenges faced by Healthcare Professionals in reporting Near Miss Incidents in a Hospital., at the Amathole District, Eastern Cape Province, South Africa.

Nuckols, T. K., Bell, D. S., Paddock, S. M., & Hilborne, L. H. (2008). Contributing factors identified by hospital incident report narratives. *BMJ Quality & Safety*, *17*(5), 368-372.

O'Beirne, M., Sterling, P. D., Zwicker, K., Hebert, P., & Norton, P. G. (2011). Safety incidents in family medicine. *BMJ quality & safety*, *20*(12), 1005–1010. https://doi.org/10.1136/bmjqs-2011-000105

O'Connor, P., & Long, L. (2017). Barriers to incident reporting among nurses. Journal of Nursing Management, 25(4), 267-276.

Ocloo, J., Garfield, S., Franklin, B. D., & Dawson, S. (2021). Exploring the theory, barriers and enablers for patient and public involvement across health, social care and patient safety: a systematic review of reviews. *Health research policy and systems*, *19*(1), 8.

Ock, M., Lim, S. Y., Jo, M. W., & Lee, S. I. (2017). Frequency, expected effects, obstacles, and facilitators of disclosure of patient safety incidents: a systematic review. *Journal of Preventive Medicine and Public Health*, *50*(2), 68.

Öhrn, A., Elfström, J., Liedgren, C., & Rutberg, H. (2011). Reporting of sentinel events in Swedish hospitals: a comparison of severe adverse events reported by patients and providers. *The Joint Commission Journal on Quality and Patient Safety*, *37*(11), 495-501.

Okafor, N. G., Doshi, P. B., Miller, S. K., McCarthy, J. J., Hoot, N. R., Darger, B. F., ... & Chathampally, Y. G. (2015). Voluntary medical incident reporting tool to improve physician reporting of medical errors in an emergency department. *Western Journal of Emergency Medicine*, *16*(7), 1073.

Panagioti, M., Khan, K., & Campbell, S. (2019). Preventable patient harm across medical care settings. BMJ, 366, l4185.

Parker, J., & Davies, B. (2020). No blame no gain? From a no blame culture to a responsibility culture in medicine. *Journal of Applied Philosophy*, *37*(4), 646-660.

Pascual, I.L.O., Hipona, J.B., Tuazon, A.A., Dael, C.C.C., Dionisio, A.S., Zapico, S.V. and Lumbo, H.B., 2024. Behaviors, barriers and motivation to incident reporting among staff nurses. Globus: An International Journal of Medical Science, Engineering & Technology, 13(1). doi:10.46360/globus.met.320241007

Patterson, M., et al. (2010). Organizational culture and incident reporting. Health Care Management Review, 35(2), 124-133.

Peyrovi, H., Nikbakht Nasrabadi, A., & Valiee, S. (2016). Exploration of the barriers of reporting nursing errors in intensive care units: A qualitative study. *Journal of the Intensive Care Society*, *17*(3), 215-221.

Pfeiffer, Y., Manser, T., & Wehner, T. (2010). Conceptualising barriers to incident reporting: a psychological framework. *Quality and Safety in Health Care*, *19*(6), e60-e60.

Pfeiffer, Y., Briner, M., Wehner, T., & Manser, T. (2013). Motivational antecedents of incident reporting: evidence from a survey of nurses and physicians. *Swiss medical weekly*, *143*, w13881.

Pham, J. C., et al. (2013). Delays in incident reporting in developing countries. BMJ Quality & Safety, 22(10), 789-795.

Pham, J. C., Girard, T., & Pronovost, P. (2011). A culture of safety in healthcare. Critical Care Clinics, 27(4), 661–670.

Poku CA, Bayuo J, Kwashie AA, Ofei AMA (2024) Intervention to improve adverse event reporting in the emergency department: Protocol of a systematic review and meta-analysis. PLOS ONE 19(8): e0306885. https://doi.org/10.1371/journal.pone.0306885

Polisena, J., Gagliardi, A., & Clifford, T. (2015). How can we improve the recognition, reporting and resolution of medical device-related incidents in hospitals? A qualitative study of physicians and registered nurses. *BMC Health Services Research*, *15*(1), 220.

Prang, I. W., & Jelsness-Jørgensen, L. P. (2014). Should I report? A qualitative study of barriers to incident reporting among nurses working in nursing homes. *Geriatric Nursing*, *35*(6), 441-447.

Pronovost, P. J., Holzmueller, C. G., Young, J., Whitney, P., Wu, A. W., Thompson, D. A., ... & Morlock, L. L. (2007). Using incident reporting to improve patient safety: a conceptual model. *Journal of patient safety*, *3*(1), 27-33.

Pronovost, P., Berenholtz, S., & Needham, D. (2008). Sustaining improvements in incident reporting. Critical Care Medicine, 36(11), 3061–3062.

Pronovost, P. J., Thompson, D. A., Holzmueller, C. G., Lubomski, L. H., Dorman, T., Dickman, F., ... & Morlock, L. L. (2006). Toward learning from patient safety reporting systems. *Journal of critical care*, *21*(4), 305-315.

Pukk-Härenstam, K., Wallin, L., & Lindblad, M. (2009). National reporting systems in Sweden. Quality in Health Care, 18(4), 299–304.

Mahajan, R. P. (2010). Critical incident reporting and learning. *British journal of anaesthesia*, *105*(1), 69-75.

Rafter, N., Hickey, A., Condell, S., Conroy, R., O'connor, P., Vaughan, D., & Williams, D. (2015). Adverse events in healthcare: learning from mistakes. *QJM: An International Journal of Medicine*, *108*(4), 273-277.

Rahman Jabin, M. S., Steen, M., Wepa, D., & Bergman, P. (2023). Assessing the healthcare quality issues for digital incident reporting in Sweden: incident reports analysis. *Digital Health*, *9*, 20552076231174307.

Ramacciati, N., Guazzini, A., Caldelli, R., & Rasero, L. (2021). User-friendly system (a smartphone app) for reporting violent incidents towards emergency nurses in the Emergency Department: an Italian multicenter study. *La Medicina del Lavoro*, *112*(1), 68.

Ramírez, E., Martín, A., Villán, Y., Lorente, M., Ojeda, J., Moro, M., ... & SINOIRES Working Group. (2018). Effectiveness and limitations of an incident-reporting system analyzed by local clinical safety leaders in a tertiary hospital: Prospective evaluation through real-time observations of patient safety incidents. *Medicine*, *97*(38), e12509.

Rashed, A., & Hamdan, M. (2019). Physicians' and nurses' perceptions of and attitudes toward incident reporting in Palestinian hospitals. *Journal of patient safety*, *15*(3), 212-217.

Reason, J. (2000). Human error: Models and management. BMJ, 320(7237), 768-770.

Riley, W., Liang, B. A., Rutherford, W., & Hamman, W. (2008). The Patient Safety and Quality Improvement Act of 2005: developing an error reporting system to improve patient safety. *Journal of Patient Safety*, *4*(1), 13-17.

Rothschild, J. M., Landrigan, C. P., Cronin, J. W., Kaushal., R., Lockley, S. W., Burdick, E., ... & Bates, D. W. (2005). The Critical Care Safety Study: The incidence and nature of adverse events and serious medical errors in intensive care. *Critical care medicine*, *33*(8), 1694-1700.

Sahay, M., Kumar, A., & Balakrishnan, R. (2021). Incident reporting in healthcare: Global perspectives. International Journal of Quality in Health Care, 33(3), mzab013.

Salem, A. H., & Abdelhamid, R. G. (2024). Incident Reporting Culture in the Critical Care Units: Barriers, and Suggestions for Improvement from Nurses' Perspectives. *Assiut Scientific Nursing Journal., 12*(44), 120-130.

Samsiah, A., Othman, N., Jamshed, S., & Hassali, M. A. (2020). Knowledge, perceived barriers and facilitators of medication error reporting: a quantitative survey in Malaysian primary care clinics. *International journal of clinical pharmacy*, *42*(4), 1118–1127. https://doi.org/10.1007/s11096-020-01041-0

Santa, R., Borrero, S., Ferrer, M., & Gherissi, D. (2018). Fostering a healthcare sector quality and safety culture. *International journal of health care quality assurance*, *31*(7), 796-809.

Sarkar, S., Verma, A., & Maiti, J. (2017). Prediction of occupational incidents using proactive and reactive data: a data mining approach. In *Industrial safety management: 21st century perspectives of Asia* (pp. 65-79). Singapore: Springer Singapore.

Sarkhosh, S., Abdi, Z., & Ravaghi, H. (2022). Engaging patients in patient safety: a qualitative study examining healthcare managers and providers' perspectives. *BMC nursing*, *21*(1), 374.

Sathiyan, R. (2022). Electronic Adverse Event Reporting Management System Improving the Time Management and Quality Processes of Adverse Event Reporting Process in a Private Healthcare Organisation in the UAE. *Available at SSRN 4937952*.

Schein, E. H. (2010). Organizational culture and leadership. Jossey-Bass.

Schectman, J. M., & Plews-Ogan, M. L. (2006). Physician perception of hospital safety and barriers to incident reporting. *The Joint Commission Journal on Quality and Patient Safety*, *32*(6), 337-343.

Schildmeijer, K., Unbeck, M., Muren, O., Perk, J., Pukk Härenstam, K., & Nilsson, L. (2013). Retrospective record review in proactive patient safety work–identification of no-harm incidents. *BMC health services research*, *13*(1), 282.

Schmidek, J. M., & Weeks, W. B. (2005). Relationship between tort claims and patient incident reports in the Veterans Health Administration. *BMJ Quality & Safety*, *14*(2), 117-122.

Schulson, L. B., Rodriguez, J. A., Cruz, R., Flynn, D., & Fernandez, A. (2025). Patient Safety Event Risk and Language Barriers: A Scoping Review. *The Joint Commission Journal on Quality and Patient Safety*.

Schwendimann, R., Blatter, C., Dhaini, S., Simon, M., & Ausserhofer, D. (2018). The occurrence, types, consequences and preventability of in-hospital adverse events–a scoping review. *BMC health services research*, *18*(1), 521.

Shanmuga Anandan, A., & Johnson, D. (2022). Features of incident reports that prompt reviewer feedback and organisational change: A retrospective review. *Journal of Patient Safety and Risk Management*, *27*(5), 209-217.

Sharma, A. E., Yang, J., Del Rosario, J. B., Hoskote, M., Rivadeneira, N. A., Council, S. R. A., & Sarkar, U. (2021). What safety events are reported for ambulatory care? Analysis of incident reports from a patient safety organization. *The Joint Commission Journal on Quality and Patient Safety*, *47*(1), 5-14.

Shemsu, A., Dechasa, A., Ayana, M., & Tura, M. R. (2024). Patient safety incident reporting behavior and its associated factors among healthcare professionals in Hadiya zone, Ethiopia: A facility based cross-sectional study. *International journal of nursing studies advances*, *6*, 100209. https://doi.org/10.1016/j.ijnsa.2024.100209

Shojania, K. G. (2008). The frustrating case of incident-reporting systems. *BMJ Quality & Safety*, *17*(6), 400-402.

Siman, A. G., Cunha, S. G. S., & Brito, M. J. M. (2017). The practice of reporting adverse events in a teaching hospital. *Revista da Escola de Enfermagem da U S P*, *51*, e03243. https://doi.org/10.1590/S1980-220X2016045503243

Singer, S. J., Lin, S., & Gaba, D. M. (2009). Culture of safety and reporting behaviors. Health Services Research, 44(2), 399–421.

Silpasuwan, P., Viwatwongasame, C., Kongtip, P., Bandhukul, A., Omas, T., & Woskie, S. (2017). Catching and correcting unreported, under-reported accidents (near-misses) among healthcare provider in Thailand. *Archives of medicine*, *9*(2), 1.

Snijders, C., van Lingen, R. A., Molendijk, A., & Fetter, W. P. (2007). Incidents and errors in neonatal intensive care: a review of the literature. *Archives of disease in childhood. Fetal and neonatal edition*, *92*(5), F391–F398. https://doi.org/10.1136/adc.2006.106419

Spencer, C., Sitarz, J., Fouse, J., & DeSanto, K. (2023). Nurses' rationale for underreporting of patient and visitor perpetrated workplace violence: a systematic review. *BMC nursing*, *22*(1), 134.

Stavropoulou, C., Doherty, C., & Tosey, P. (2015). Underreporting in incident reporting systems. Health Policy, 119(8), 1030–1038.

Stanhope, N., Crowley-Murphy, M., Vincent, C., O'Connor, A. M., & Taylor-Adams, S. E. (1999). An evaluation of adverse incident reporting. *Journal of evaluation in clinical practice*, *5*(1), 5-12.

Stewart, D., Thomas, B., MacLure, K., Wilbur, K., Wilby, K., Pallivalapila, A., ... & Al Hail, M. (2018). Exploring facilitators and barriers to medication error reporting among healthcare professionals in Qatar using the theoretical domains framework: A mixed-methods approach. *PloS one*, *13*(10), e0204987.

Strahonja, V., & Saletović, K. (2007). Proactive approach to the incident and problem management in communication networks. *Journal of information and organizational sciences*, *31*(1), 245-259.

Sujan, M. A., et al. (2011). Training programs for incident reporting systems. Safety Science, 49(10), 1297-1305.

Sullivan, J. L., Shin, M. H., Chan, J., Shwartz, M., Miech, E. J., Borzecki, A. M., ... & Rosen, A. K. (2024). Quality improvement lessons learned from National Implementation of the "Patient Safety Events in Community Care: Reporting, Investigation, and Improvement Guidebook". *Health Services Research*, *59*, e14317.

Taeidi, E. (2023). *The Impact of Leadership Styles on Intention to Report Errors in the Healthcare Sector* (Doctoral dissertation, University of Wollongong).

Takahashi, H., Ito, M., & Sakai, Y. (2019). Barriers to incident reporting in Japan. Asia Pacific Journal of Public Health, 31(5), 435–442.

Takeda, H., Matsumura, Y., Nakajima, K., Kuwata, S., Zhenjun, Y., Shanmai, J., ... & Inoue, M. (2003). Health care quality management by means of an incident report system and an electronic patient record system. *International journal of medical informatics*, *69*(2-3), 285-293.

Tamuz, M., Thomas, E. J., & Franchois, K. E. (2004). Defining and classifying medical error: lessons for patient safety reporting systems. *BMJ Quality & Safety*, *13*(1), 13-20.

Tatum, M. N., & Kumar, M. S. (2021). Factors influencing nursing staff to generate incident reports in mafraq hospital., Abu Dhabi, UAE. *Palarch's Journal of Archaeology of Egypt/Egyptology*, *18*(4), 7780-7793.

Tawfik, D., Profit, J., & Edwards, E. M. (2018). Adapting reporting systems for multilingual environments. Pediatrics, 141(1), e20173410.

Thomas, M., & Al-Mutairi, S. (2021). Fear of reprisal in incident reporting. Nursing Management, 28(7), 12-18.

Throckmorton, T., & Etchegaray, J. (2007). Factors affecting incident reporting by registered nurses: the relationship of perceptions of the environment for reporting errors, knowledge of the nursing practice act, and demographics on intent to report errors. *Journal of PeriAnesthesia Nursing*, *22*(6), 400-412.

Toren, O., Dokhi, M., & Dekeyser Ganz, F. (2021). Hospital nurses' intention to report near misses, patient safety culture and professional seniority. *International Journal for Quality in Health Care*, *33*(1), mzab031.

Tuttle, D., Holloway, R., Baird, T., Sheehan, B., & Skelton, W. K. (2004). Electronic reporting to improve patient safety. *BMJ Quality & Safety*, *13*(4), 281-286.

UAE Government. (2020). UAE Vision 2030: National Objectives for Health. UAE Government Portal.

Uibu, E., Põlluste, K., Lember, M., & Kangasniemi, M. (2020). Reporting and responding to patient safety incidents based on data from hospitals' reporting systems: a systematic review. *J Hosp Adm*, *9*(2), 22-32.

Uibu, E., Binsol, K., Põlluste, K., Lember, M., & Kangasniemi, M. (2025). Results of a qualitative semi-structured interview study with hospital nursing staff to improve incident reporting systems in Estonia. *Journal of Healthcare Quality Research*, *40*(1), 39-47.

Unal., A., & Seren, S. (2016). Medical error reporting attitudes of healthcare personnel, barriers and solutions: a literature review. *J Nurs Care*, *5*(6), 377.

Uwimana, L. (2017). *Barriers and motivating factors associated with patient incident reporting among nurses at Kigali University Teaching Hospital* (Doctoral dissertation, University of Rwanda).

Vahednasiri, A., & Eini, S. (2021). The causes of nursing errors and effective factors in non-reporting of errors from the perspective of nurses in the hospitals affiliated to maragheh university of medical sciences. *Nursing And Midwifery Journal., 19*(9), 716-724.

Van Geest, J., & Cummins, D. (2003). Reporting errors in healthcare. The Milbank Quarterly, 81(4), 729–762.

Varallo, F. R., Passos, A. C., Nadai, T. R. D., & Mastroianni, P. D. C. (2018). Incidents reporting: barriers and strategies to promote safety culture. Revista da Escola de Enfermagem da USP, 52, e03346.

Vincent, C., & Amalberti, R. (2016). Safer healthcare: Strategies for the real world. Springer.

Vincent, C., et al. (2004). Reporting and learning systems for patient safety. BMJ Quality & Safety, 13(2), ii12-ii17.

Vogus, T. J., & Sutcliffe, K. M. (2007). The Safety Organizing Scale: development and validation of a behavioral measure of safety culture in hospital nursing units. *Medical care*, *45*(1), 46-54.

Vrbnjak, D., Denieffe, S., O'Gorman, C., & Pajnkihar, M. (2016). Barriers to reporting medication errors and near misses among nurses: A systematic review. *International journal of nursing studies*, *63*, 162-178.

Wagner, A., Schöne, L., & Rieger, M. A. (2020). Determinants of occupational safety culture in hospitals and other workplaces—results from an integrative literature review. *International journal of environmental research and public health*, *17*(18), 6588.

Wald, H., & Shojania, K. G. (2001). Incident reporting. Making health care safer: A critical analysis of patient safety practices, 41.

Wallace, L. M., Spurgeon, P., Benn, J., Koutantji, M., & Vincent, C. (2009). Improving patient safety incident reporting systems by focusing upon feedback–lessons from English and Welsh trusts. *Health Services Management Research*, *22*(3), 129-135.

Walsh, K., Burns, C., & Antony, J. (2010). Electronic adverse incident reporting in hospitals. *Leadership in Health Services*, *23*(4), 292-303.

Walsh, K., & Antony, J. (2007). Improving patient safety and quality: What are the challenges and gaps in introducing an integrated electronic adverse incident and recording system within health care industry?. *International journal of health care quality assurance*, *20*(2), 107-115.

Walsh, K., & Antony, J. (2009). An assessment of quality costs within electronic adverse incident reporting and recording systems: A case study. *International Journal of Health Care Quality Assurance*, *22*(3), 203-220.

Wang, L., Zhang, S., & Naeem, S. B. (2024). Modeling the predictors of health information avoidance behavior: Implications from the stimulus organism response (S-O-R) theory. *Journal of Librarianship and Information Science*, *0*(0). https://doi.org/10.1177/09610006241290265

Wang, H. E., Fairbanks, R. J., Shah, M. N., Abo, B. N., & Yealy, D. M. (2008). Tort claims and adverse events in emergency medical services. *Annals of emergency medicine*, *52*(3), 256-262.

Waring, J. J. (2004). A qualitative study of the intra-hospital variations in incident reporting. *International Journal for Quality in Health Care*, *16*(5), 347-352.

Waring, J. J. (2005). Beyond blame: cultural barriers to medical incident reporting. *Social science & medicine*, *60*(9), 1927-1935.

Waring, J., & Bishop, S. (2010). Patient safety and organizational change: Cultural and structural dynamics in healthcare. Public Administration, 88(2), 502–522.

Waring, J., Allen, D., & Braithwaite, J. (2020). Organizational culture and patient safety. Social Science & Medicine, 262, 113237.

Wasserman, M., Renfrew, M. R., Green, A. R., Lopez, L., Tan-McGrory, A., Brach, C., & Betancourt, J. R. (2014). Identifying and preventing medical errors in patients with limited English proficiency: key findings and tools for the field. *Journal for Healthcare Quality*, *36*(3), 5-16.

Wawersik, D., & Palaganas, J. (2022). Organizational factors that promote error reporting in healthcare: A scoping review. *Journal of Healthcare Management*, *67*(4), 283-301.

Wehkamp, K., Kuhn, E., Petzina, R., Buyx, A., & Rogge, A. (2021). Enhancing patient safety by integrating ethical dimensions to Critical Incident Reporting Systems. *BMC medical ethics*, *22*(1), 26.

Weiner, B. J., et al. (2008). Leadership for patient safety: A systematic review. BMJ Quality & Safety, 17(5), 399-407.

Weissman, J. S., Annas, C. L., Epstein, A. M., Schneider, E. C., Clarridge, B., Kirle, L., ... & Ridley, N. (2005). Error reporting and disclosure systems: views from hospital leaders. *Jama*, *293*(11), 1359-1366.

Westbrook, J. I., Li, L., Lehnbom, E. C., Baysari, M. T., Braithwaite, J., Burke, R., ... & Day, R. O. (2015). What are incident reports telling us? A comparative study at two Australian hospitals of medication errors identified at audit, detected by staff and reported to an incident system. *International Journal for Quality in Health Care*, *27*(1), 1-9.

Williams, D. J., Olsen, S., Crichton, W., Witte, K., Flin, R., Ingram, J., ... & Cuthbertson, B. H. (2008). Detection of adverse events in a Scottish hospital using a consensus-based methodology. *Scottish medical journal*, *53*(4), 26-30.

World Health Organization. (2009). WHO Patient Safety Alliance: Guidelines on incident reporting. WHO Press.

World Health Organization. (2020). Patient safety incident reporting and learning systems: technical report and guidance. In *Patient safety incident reporting and learning systems: technical report and guidance*.

World Health Organization. (2021). *Patient safety incident reporting and learning systems: Technical report and guidance*. Geneva, Switzerland: WHO.

Yalew, Z. M., & Yitayew, Y. A. (2021). Clinical incident reporting behaviors and associated factors among health professionals in Dessie comprehensive specialized hospital, Amhara Region, Ethiopia: a mixed method study. *BMC health services research*, *21*(1), 1331.

Yang, Y., & Liu, H. (2021). The effect of patient safety culture on nurses' near-miss reporting intention: the moderating role of perceived severity of near misses. *Journal of Research in Nursing*, *26*(1-2), 6-16.

Yoo, M. S., & Kim, K. J. (2017). Exploring the influence of nurse work environment and patient safety culture on attitudes toward incident reporting. *JONA: The Journal of Nursing Administration*, *47*(9), 434-440.

Yoon, S., & Lee, T. (2022). Factors Influencing Military Nurses' Reporting of Patient Safety Events in South Korea: A Structural Equation Modeling Approach. *Asian nursing research*, *16*(3), 162–169. https://doi.org/10.1016/j.anr.2022.05.006

Zhao, X., Zhao, S., Liu, N., & Liu, P. (2021). Willingness to report medical incidents in healthcare: a psychological model based on organizational trust and Benefit/Risk perceptions. *The journal of behavioral health services & research*, *48*(4), 583-596.

Zegers, M., De Bruijne, M. C., Wagner, C., Groenewegen, P. P., Waaijman, R., & Van Der Wal, G. (2007). Design of a retrospective patient record study on the occurrence of adverse events among patients in Dutch hospitals. *BMC health services research*, *7*(1), 27.

13. Index

A

- Accreditation standards – p. 2, 8, 13, 21, 32, 41, 46, 47, 49, 59, 69, 87, 92
- Adverse events – p. 3, 6, 9, 87, 106, 107, 122, 137, 145, 152
- Attitudes toward incident reporting – p. 1, 2, 6, 13, 18, 20, 21, 26, 29, 31, 32, 36, 38, 41, 45, 46, 48, 49, 62, 69

B

- Barriers to incident reporting – p. 2, 3, 4, 6, 9, 13, 14, 21, 22, 23, 24, 27, 29, 32, 33, 41, 42, 45, 49, 53, 56, 58, 59, 62, 67, 69, 71
- Blame culture – p. 2, 6, 9, 13, 18, 19, 21, 22, 23, 24, 27, 31, 41, 46, 49, 53, 56, 59, 62, 69
- Braun & Clarke thematic analysis – p. 3, 4, 6, 7, 17, 43, 47, 48, 56, 63, 68, 69, 71, 73, 74, 84, 85, 89, 92, 100, 101

C

- CFA (Confirmatory Factor Analysis) – p. 75, 79
- Clinical governance – p. 2, 6, 12, 19, 21, 31, 35, 42, 49, 62
- Conceptual framework – p. 26, 29
- Confidentiality – p. 2, 6, 11, 18, 27, 41, 53, 59, 67
- Cultural barriers – p. 2, 6, 9, 12, 18, 23, 24, 29, 33, 42, 49, 62, 69

D

- Data collection methods – p. 6, 87, 99, 101, 102, 103, 104
- Data analysis tools – p. 3, 4, 6, 7, 13, 16, 17, 19, 20, 26, 28, 31, 32, 38, 41, 42, 43, 44, 47, 48, 51, 53, 54, 55, 56, 57, 58, 61, 63, 66, 68, 69, 71, 73, 74, 76, 82, 84, 85, 89, 92, 93, 96, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 132, 134, 135, 136, 140, 141, 147, 150, 151, 154, 157, 160, 162
- Descriptive statistics – p. 3, 4, 6, 9, 87, 106, 107, 122, 137, 145, 152
- DHA (Dubai Health Authority) – p. 2, 4, 7, 9, 11, 16, 17, 21, 23, 26, 29, 34, 38, 39, 40, 42, 47, 51, 52, 53, 57, 58, 59, 62, 64, 66, 68, 69, 73, 75, 80, 82, 88, 89, 95, 96, 97, 98, 100, 103, 106, 108, 122, 124, 129, 141–168

E

- EFA (Exploratory Factor Analysis) – p. 3, 4, 6, 7, 17, 24, 38, 43, 47, 48, 56, 63, 68, 69, 71, 73, 74, 84, 85, 89, 92, 100–168
- Electronic reporting systems – p. 1–168
- Ethical responsibility – p. 1, 3, 4, 5, 6, 19, 22, 32, 44, 45, 48, 64, 84, 85, 92, 99, 101, 104, 105, 111, 112, 113, 114, 119, 133, 134, 137, 152, 158, 164
- Ethics considerations – p. 4, 6, 21, 64, 85, 104, 111, 114, 150, 164

F

- Fear of punitive action – p. 2, 3, 4, 5, 6, 10–167
- Feedback mechanisms – p. 2, 4, 5, 6, 12–161
- Fornell-Larcker Criterion – p. 7, 116, 118, 119, 151

G

- Gaps in literature – p. 3, 6, 7, 20, 32, 37, 38, 43, 51, 58, 64, 80, 83, 86, 88, 98, 106, 114, 115, 118, 132, 134, 141, 144, 145, 146, 156, 161–163

H

- Healthcare leadership – p. 1–168
- Hypothesis testing – p. 3, 7, 16, 36, 106, 116, 119, 120, 133, 134, 138, 139

I

- Incident characteristics – p. 1–168
- Incident reporting definition – p. 1–168
- Incident reporting in UAE – p. 1–168
- Independent variables – p. 6, 44–149

J

- Joint Commission International (JCI) – p. 2, 13, 14, 17, 21, 37, 39, 46, 47, 49, 51, 59, 62, 63, 69, 87, 94–168
- Just culture – p. 1–166

K

- KMO (Kaiser-Meyer-Olkin) test – p. 4, 99, 101, 107, 110, 112, 113, 116, 117, 140, 141

L

- Leadership and supervisor support – p. 1–168
- Likert-scale questionnaire – p. 3, 6, 7, 61, 73, 74, 101, 104, 153, 165, 167, 168

M

- Methodology – p. 6, 7, 99, 104, 164
- Mixed-methods design – p. 3, 5, 6, 13, 21, 32, 49, 55, 69, 74, 94, 99–165
- Motivation to report – p. 2–168

N

- Near-miss incidents – p. 2–168
- Non-punitive culture – p. 1–166
- NVivo software – p. 42, 59, 60, 106, 115, 122, 123, 154

O

- Organizational culture – p. 1–168
- Organizational risk management – p. 1–168

P

- Patient safety – p. 1–168
- PLS-SEM (Partial Least Squares Structural Equation Modelling) – p. 2, 3, 4, 7, 38, 55, 67, 73, 74, 75, 78, 106–164
- Policies and procedures – p. 2–168
- Professional responsibility – p. 1–168
- Purposive sampling – p. 3, 4, 6, 87, 99–140

Q

- Qualitative analysis – p. 2–168
- Quality Department procedures – p. 2–168
- Quantitative analysis – p. 2–168
- Questionnaire design – p. 3, 5, 6, 7, 13, 21, 32, 49, 55, 61, 69, 73, 74, 94, 99–168

R

- Reliability and validity – p. 7, 107, 111–151
- Reporting frequency – p. 1–168
- Risk management policies – p. 1–168

S

- Sampling strategy – p. 3, 4, 5, 6, 59, 87, 99–148
- SEM (Structural Equation Modelling) – p. 2, 4, 7, 67, 75, 106–164
- SmartPLS software – p. 42, 59, 60, 106, 107, 115, 119, 122, 123, 154
- SPSS software – p. 42, 59, 60, 106, 115, 122, 123, 154
- Staff perceptions – p. 1–168
- Statistical analysis – p. 2–168

- Survey data – p. 3–167

T

- Thematic analysis – p. 3–168
- Training and awareness – p. 3–168
- Triangulation – p. 102, 106

U

- UAE healthcare context – p. 1–168

V

- Validity testing – p. 7, 16, 36, 106, 107, 111–121, 151
- Variance explained – p. 4, 7, 32, 55, 75, 84–134

W

- Willingness to report – p. 3–168
- Workload pressures – p. 2, 4, 6, 8, 22, 23, 38, 44, 45, 72, 76, 89, 103, 105, 111, 114, 145

14. Appendices

14.1 Survey Questionnaire

Survey on Staff Perceptions and Attitudes on Incident Reporting and it's Management: A Study of Hospitals in UAE

This survey aims to assess healthcare staffs' perceptions and attitudes about incident (event) reporting, characteristics of the incident reporting system and the organization risk management policies and procedures that influence them in reporting incidents in the hospitals in UAE. The survey takes about 15 to 20 minutes to complete

Incident /errors reporting system: A system by which any deviation from usual medical care that causes an injury to the patient or poses a risk of harm (including errors, preventable adverse events, and hazards) is reported verbally or in written documents.

Incident / Event: Joint Commission International defines patient safety event as "An event, incident, or condition that could have resulted or did result in harm to a patient" (JCI Accreditation standards for hospitals, 7th Edition)
Preventable adverse events are defined as "care that fell below the standard expected of physicians in their community (AHRQ)

Error: It is defined as ""an act of commission (doing something wrong) or omission (failing to do the right thing) leading to an undesirable outcome or significant potential for such an outcome." (AHRQ)

Near Miss: It is defined as "any event that could have had adverse consequences but did not and was indistinguishable from fully fledged adverse events in all but outcome." (Adverse Events, Near Misses, and Errors, AHRQ).

Non-punitive or Blame free: Reporters are free from fear of retaliation against themselves or punishment of others as a result of reporting.

Clinical staffs were defined as HCWs involved in direct patient care as part of their regular routine

Nonclinical staffs were defined as those not involved in patient care and with no opportunity for patient contact during their regular work routine"

SECTION A: BACKGROUND INFORMATION

1. Name of Healthcare Organization (HCO) Optional

……..……..……...

2. Type of HCO: ☐ Hospital ☐ Day Care Surgery Center ☐ Clinics / Medical Center

☐ Others……

3. Emirate: ☐ Abu Dhabi ☐ Dubai ☐ Sharjah ☐ Ajman

☐ RAK ☐ Um Al Quwain ☐ Fujairah

4. Gender: ☐ Male ☐ Female ☐ Prefer not to say

5.Professional Position:

☐ Doctors

☐ Nurses & HCA

☐ Allied Medical Staff (Dietitians, Physiotherapists etc)

☐ Laboratory and Radiology technicians

☐ Non-Clinical Staff (Administration, Front office, HK etc)

6. Educational level: ☐ Post Graduate ☐ Graduate ☐ Diploma

☐ Others, Specify……

7. Your primary work area or unit in this hospital

☐ Inpatient Wards ☐ Intensive Care units ☐ Emergency ☐ Operation Theatre

☐ Labor Room ☐ Dialysis ☐ Chemotherapy / Radiation therapy (Oncology)

☐ Outpatient Clinics ☐ Laboratory ☐ Radiology ☐ Pharmacy

☐ Reception ☐ Administration ☐ Housekeeping ☐ Kitchen

☐ Others,

Specify……

……

8. How long have you been working in this hospital?

☐ 0-12 months ☐ 1-2 years ☐ 2-5 years ☐ 5-10 years ☐ More than 10 years

PS: Please note that in the below sections, errors, incidents and events are used as synonymously

Section 2 - Incident reporting your HCO / hospital system/work environment

Please indicate your agreement or disagreement with the following statement about incident reporting in your hospital system/work environment and the factors that influence your incident reporting behavior.

PS: Please note, that in the below sections errors, incidents and events are used synonymously. Also, healthcare organization is used synonymously with hospitals.

S.No	Aspect	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
INCIDENT REPORTING YOUR HCO / HOSPITAL SYSTEM/WORK ENVIRONMENT						
9	There is a formal incident reporting system at the hospital	1	2	3	4	5
10	Lack of clear definition of incident / event / error that may occur	1	2	3	4	5
11	Lack of feedback about incident / event / error	1	2	3	4	5
12	Staff feels like their mistakes are held against them	1	2	3	4	5
13	Staff worry that mistakes they make are kept in their personal file	1	2	3	4	5
14	Reporting is a method which is used to pin point blame	1	2	3	4	5
15	No atmosphere of trust in the unit / hospital	1	2	3	4	5
16	High level work load is common in this unit	1	2	3	4	5
17	We have enough staff to handle workload	1	2	3	4	5

18	We work in crisis mode trying to do too much too quickly	1	2	3	4	5
19	Reporting incident is not part of my job	1	2	3	4	5
20	I am unsure whose responsibility it is to report errors	1	2	3	4	5
21	Reporting (an incident) takes long time to complete	1	2	3	4	5
22	No perceived benefits of reporting incidents (learning from error)	1	2	3	4	5
23	Reporting incidents let everyone know that we have made a mistake	1	2	3	4	5
24	Most serious errors don't happen around here	1	2	3	4	5
25	Near miss (those errors intercepted and prevented before happening or reaching the patient) should not be reported	1	2	3	4	5
26	My supervisor seriously considers staff suggestions to improve patient safety	1	2	3	4	5
27	Staff feel free to question the decisions of those with high authority	1	2	3	4	5
28	Manager /supervisor protect reporters of error from negative consequences	1	2	3	4	5
29	Hospital Risk Management policy encourages non-punitive or blame free culture	1	2	3	4	5
30	We are informed about errors that happen in the unit	1	2	3	4	5
Section 3 - Consequences (fears) of reporting incidents						
31	Fear of administrative sanctions (loss of job, transfer, prevent promotion)	1	2	3	4	5
32	Fear of lawsuits (legal and financial penalties)	1	2	3	4	5
33	Fear that own competence may be questioned	1	2	3	4	5

34	Fear of loss of respect of colleagues	1	2	3	4	5
35	Fear of loss of personal reputation for being the whistle blower	1	2	3	4	5
36	Fear of loss of trust from patients or their families	1	2	3	4	5
37	Fear of press and the issue becoming public leading to loss of organizational reputation	1	2	3	4	5
38	Fear of loss of patients	1	2	3	4	5
Section 4 - Motivation (benefits) to report incidents						
39	Reporting incidents gets immediate help to patients	1	2	3	4	5
40	Reporting helps in learning from incidents or errors	1	2	3	4	5
41	Reporting is needed because it is ethical and professional responsibility to report incidents	1	2	3	4	5
42	I report because we improve our processes and system after incident report analysis	1	2	3	4	5
43	Reporting incidents have minimized repetition of errors	1	2	3	4	5
44	Our risk management policy encourages us to be part of the incident report analysis after reporting	1	2	3	4	5
45	We are involved in incident report analysis and identification of corrective actions	1	2	3	4	5
46	Incident analysis is focused on systems and processes rather than individuals	1	2	3	4	5
47	Our risk management policy protects us from punitive action after reporting	1	2	3	4	5
48	We are appreciated or rewarded for generating incident reports	1	2	3	4	5

Section B: Characteristics of an Incident reporting system

Section three: Select one from each of the following pairs of selection characteristics of an incident reporting system that you would support?

49. Method of reporting: ☐ Paper based/written ☐ Electronic Reporting ☐ Verbal reporting

50. Confidentiality ☐ Confidential., anonymous ☐ Reporter identified, known

51. Enforcement ☐ Voluntary system ☐ Compulsory /mandatory system

52. Culture ☐ Punitive system that take actions penalties against those make errors ☐ Non-punitive system, no action or penalties for unintentional errors.

53. Use of Incident reports ☐ Identify errors and learning from mistakes; improve patient safety ☐ To identify errors and punish responsible person

54. Type of Error reported ☐ Report all type of incidents (minor, near miss, serious) ☐ Report only errors that harm the patients

Section C - Willingness and Easiness to Report Errors

55. Please select one of the following person that you would be willing and easy to report errors to:

☐ Quality Dept ☐ Treating Doctor ☐ Colleague/ peer

☐ Head of unit ☐ Hospital administration

☐ Independent agency outside the hospital (E.g MOH / Pharmco-vigilance / DHA / DOH etc)

☐ Others, Specify……

56. Section 5 - Please specify other recommendations that would help in developing a robust and effective incident reporting system at a healthcare organization

……
……
……
……
……
……
……

Thank you very much for your time in completing this questionnaire and contributing to new knowledge in this field.

Sravan Kumar

14.2 Interview Guide

Interview of quality department professionals, heads of the departments and healthcare leaders on management of incident reports towards the study of "Staff Perceptions and Attitudes on Incident Reporting and it's Management: A Study of Hospitals in the UAE"

"This interview aims to gather insights from Quality Department Professionals, Heads of Departments and healthcare leaders regarding their processes, perspectives, and opinions on the management of incident reports. The survey is estimated to take approximately 20-30 minutes to complete."

Incident /errors reporting system: A system by which any deviation from usual medical care that causes an injury to the patient or poses a risk of harm (including errors, preventable adverse events, and hazards) is reported verbally or in written documents.

Incident / Event: Joint Commission International defines patient safety event as "An event, incident, or condition that could have resulted or did result in harm to a patient" (JCI Accreditation standards for hospitals, 7th Edition, 2021).

Preventable adverse events are defined as "care that fell below the standard expected of physicians in their community (AHRQ).

Error: It is defined as “"an act of commission (doing something wrong) or omission (failing to do the right thing) leading to an undesirable outcome or significant potential for such an outcome." (AHRQ).

Near Miss: It is defined as "any event that could have had adverse consequences but did not and was indistinguishable from fully fledged adverse events in all but outcome." (Adverse Events, Near Misses, and Errors, AHRQ).

Non-punitive or Blame free: Reporters are free from fear of retaliation against themselves or punishment of others as a result of reporting.

Clinical staffs were defined as HCWs involved in direct patient care as part of their regular routine.

Nonclinical staffs were defined as those not involved in patient care and with no opportunity for patient contact during their regular work routine”.

Name of Healthcare Organization (HCO) (optional)

……..…….

Designation: ……..…….

Questions:

1. Could you elaborate the current process or procedures of handling incident reports once you receive them?

2. How do you conduct root cause analysis? Does this process involve staff participation in identifying root causes and corrective actions?

3. How do you make sure that this process of root cause analysis and corrective actions identification does not vindicate staff and rather, enhance their willingness to report?

4. Do you employ any reward systems for staff reporting incidents in your organizations? If yes, please explain how does it work?

5. Please explain the role of organization's risk management policies and procedures in promoting incident reporting among hospital staff.

6. Do you provide any training on incidents and incident reporting? If yes, did you see any positive or negative impact on staff in reporting incidents by staff (increase or decrease)?

Thank you very much for your time in completing this questionnaire and contributing to new knowledge in this field.

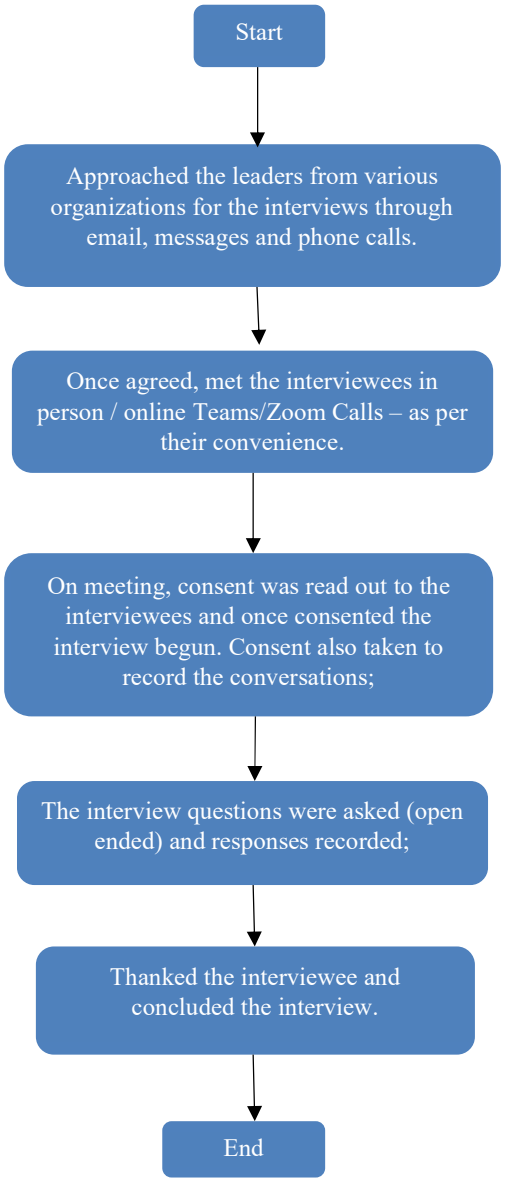
Sravan Kumar
PhD Scholar
Lovely professional University
Punjab, India

sravanmy@gmail.com

00971 55 218 1424

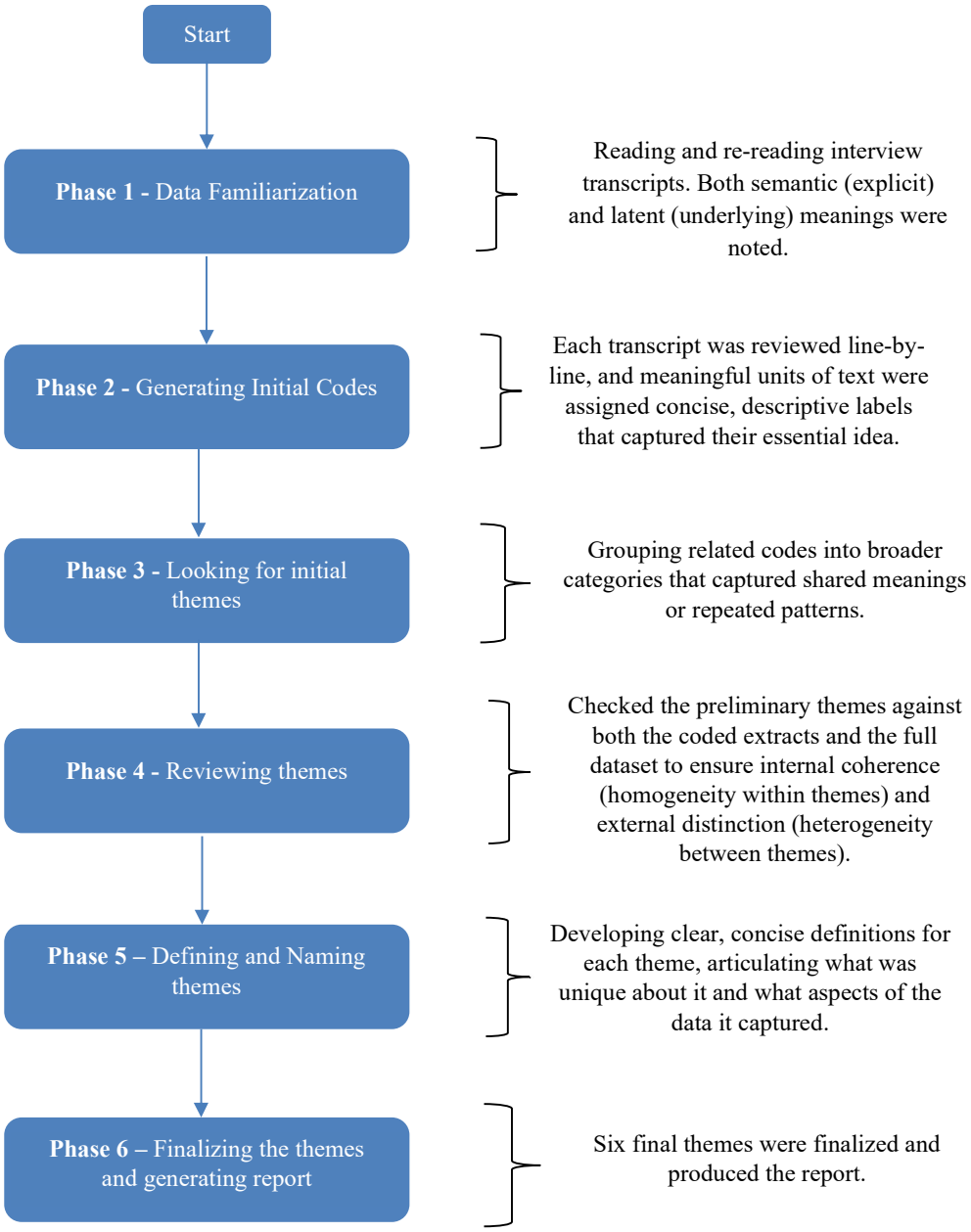
14.3 Process of conducting Interviews

INTERVIEW PROCESS



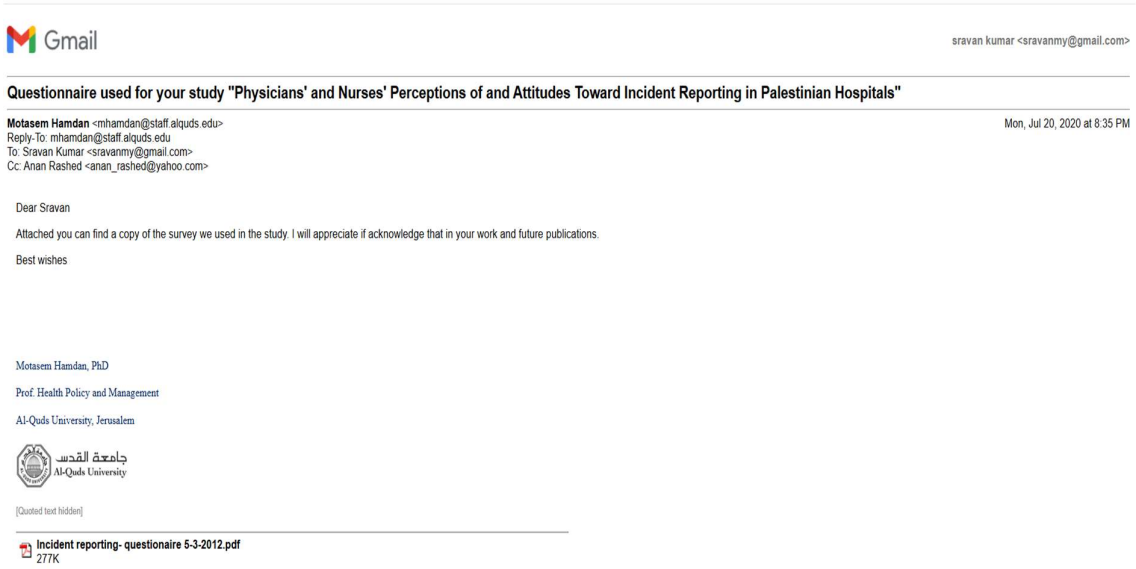
14.4 Thematic Analysis Process Flow

THEMATIC ANALYSIS PROCESS FLOW



Six final themes - ***Reporting Culture & Psychological Safety*** (Fostering a Safe Space for Incident Disclosure), ***Workflow, Feedback & Closure*** (Ensuring Timely Resolution and Communication), ***Data Quality & Taxonomy Standards*** (Improving Data Accuracy and Classification), ***Learning System & Root Cause Analysis*** (Turning Reports into Organizational Learning), ***Technology & EHR Integration*** (Leveraging Digital Tools for Safer Reporting), and ***Leadership, Governance & Resourcing*** (Driving Safety Through Policy and Support).

14.5 Permission to use the questionnaire from previous researcher



Gmail sravan kumar <sravanmy@gmail.com>

Questionnaire used for your study "Physicians' and Nurses' Perceptions of and Attitudes Toward Incident Reporting in Palestinian Hospitals"

Motasem Hamdan <mhamdan@staff.alquds.edu> Mon, Jul 20, 2020 at 8:35 PM
Reply-To: mhamdan@staff.alquds.edu
To: Sravan Kumar <sravanmy@gmail.com>
Cc: Anan Rashed <anan_rashed@yahoo.com>

Dear Sravan

Attached you can find a copy of the survey we used in the study. I will appreciate if acknowledge that in your work and future publications.

Best wishes

Motasem Hamdan, PhD
Prof. Health Policy and Management
Al-Quds University, Jerusalem

جامعة القدس
Al-Quds University

[Quoted text hidden]

Incident reporting- questionaire 5-3-2012.pdf
277K

15. List of Publications

- **Kumar, S. and Bhalla, P., 2025.** The role of leadership and supervisor support on the willingness of staff to report incidents. *Journal of Applied Bioanalysis*, 11(3), pp.321–327. Available at: http://doi.org/10.53555/jab.v11i3.247 [Accessed 15 Aug. 2025].
- **Kumar, S., & Bhalla, P. (2024).** Impact Of Organizational Risk Management Policies And Procedures On Incident Reporting Behavior Of Staff: A Perceptive Study In The UAE. *Frontiers in Health Informatics*, *13*(5).
- **Kumar, M. Y. S., & Bhalla, P. (2019).** Stress among nursing staff in hospitals and its relation with job satisfaction, job performance and quality of nursing care: A literature review. *Journal of Nursing and Care*, *8*(3), 129-136.

16. List of Conferences

- Nursing Virtual 2020 by Magnus Group Conferences and Organizing Committee held from 17-18 Aug, 2020.
- Business Resilience & Reinvention in the VUCA world (ICBRR-VUCA 2021), 27th July 2021 by GNA University
- 16th Quality Management and Patient Safety Conference, Arab Health 2025, on Jan 29th and 30th, 2025, Dubai, UAE