THE RELATIONSHIP BETWEEN PATIENT SAFETY CULTURE COMPOSITES AND VOLUNTARY REPORTING NEAR-MISS INCIDENTS AMONG NURSES IN AL DHAFRA HOSPITALS: THE MEDIATOR ROLE OF ELECTRONIC REPORTING SYSTEM

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by

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LIST OF ABBREVIATIONS

ADH	Al Dhafra Hospitals
AHRQ	Agency for Healthcare Research and Quality
CFA	Confirmatory Factor Analysis
DOH	Department of Health
ERS	Electronic Reporting System
GDP	Gross Domestic Product
HRO	High Reliability Organizations
HSOPSC	Hospital Survey on Patient Safety Culture
ICU	Intensive Care Unit
IOM	Institute of Medicine
MZH	Madinat Zayed Hospital
OECD	Organization for Economic Development and Cooperation
PSCC	Patient Safety Culture Composite
SEM	Structural Equation Modelling
SPSS	Statistical Package for the Social Sciences
UAE	United Arab Emirates
UK	United Kingdom
USA	United States of America
VRNM	voluntary reporting near-misses
WHO	World Health Organization

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HUBUNGAN ANTARA KOMPOSIT BUDAYA KESLELAMATAN PESAKIT DAN PELAPORAN SUKARELA KEJADIAN _NEAR-MISS_ DI KALANGAN JURURAWAT DI HOSPITAL AL DHAFRA: PERANAN PENGANTARAAN SISTEM LAPORAN ELEKTRONIK

ABSTRAK

Keselamatan pesakit kekal sebagai keutamaan global, dengan ralat perubatan yang boleh dicegah serta kekurangan pelaporan insiden nyaris berlaku menjadi cabaran utama. Kajian ini meneliti hubungan antara komponen budaya keselamatan pesakit dan pelaporan sukarela insiden nyaris berlaku dalam kalangan jururawat di Hospital Al Dhafra, dengan sistem pelaporan elektronik sebagai perantara. Berpandukan Teori Tingkah Laku Terancang dan Model Penerimaan Teknologi, kajian ini menilai bagaimana budaya organisasi serta kebolehgunaan sistem mempengaruhi kesediaan jururawat untuk melaporkan insiden nyaris berlaku. Kajian ini menggunakan reka bentuk tinjauan keratan rentas melibatkan 444 jururawat dari enam hospital. Instrumen yang diubah suai daripada Hospital Survey on Patient Safety Culture digunakan bagi mengukur komponen budaya keselamatan pesakit, kebolehgunaan sistem pelaporan elektronik, dan tingkah laku pelaporan sukarela. Pemodelan persamaan struktur digunakan bagi menganalisis hubungan langsung dan hubungan yang dimediasi, dengan tumpuan kepada sepuluh komponen budaya keselamatan pesakit di peringkat unit dan hospital. Dapatan kajian menunjukkan hubungan positif antara budaya keselamatan pesakit dan pelaporan sukarela insiden nyaris berlaku. Faktor utama seperti tindak balas tidak menghukum terhadap kesilapan dan sokongan pengurusan terhadap keselamatan memainkan peranan yang lebih besar. Sistem pelaporan elektronik bertindak sebagai perantara penting, di mana persepsi

terhadap kemudahan penggunaan dan kebermanfaatan sistem memberi kesan kepada tingkah laku pelaporan. Namun, halangan seperti beban kerja yang tinggi, ketakutan terhadap kesalahan yang dipersalahkan, serta kekurangan mekanisme maklum balas masih menghambat penyertaan secara sukarela. Kajian ini memperluaskan aplikasi Teori Tingkah Laku Terancang dan Model Penerimaan Teknologi dalam konteks pelaporan keselamatan pesakit, dengan menekankan interaksi antara budaya organisasi dan teknologi dalam sistem pelaporan. Implikasi praktikal termasuk mewujudkan budaya yang adil (just culture), menyediakan maklum balas berterusan terhadap insiden yang dilaporkan, serta meningkatkan aksesibiliti sistem pelaporan elektronik. Kajian masa hadapan disarankan untuk meneliti kesan intervensi khusus, melibatkan peranan pelbagai profesion dalam penjagaan kesihatan, serta trend jangka panjang dalam penambahbaikan pelaporan selepas intervensi dilaksanakan.

THE RELATIONSHIP BETWEEN PATIENT SAFETY CULTURE COMPOSITES AND VOLUNTARY REPORTING NEAR-MISS INCIDENTS AMONG NURSES IN AL DHAFRA HOSPITALS: THE MEDIATOR ROLE OF ELECTRONIC REPORTING SYSTEM

ABSTRACT

Patient safety remains a global priority, with preventable medical errors and underreporting of near-miss incidents posing significant challenges. This study examines the relationship between patient safety culture components and voluntary reporting of near-miss incidents among nurses in Al Dhafra Hospitals, with the electronic reporting system as a mediator. Using the Theory of Planned Behaviour and the Technology Acceptance Model, the study assesses how organizational culture and system usability influence nurses' willingness to report near-miss incidents. A cross-sectional survey was conducted among four hundred forty-four nurses across six hospitals, utilising modified instruments from the Hospital Survey on Patient Safety Culture to measure patient safety culture components, electronic reporting system usability, and voluntary reporting behaviours. Structural equation modelling applied to analyse direct and mediated relationships, focusing on ten patient safety culture components at both the unit and hospital levels. Findings reveal a positive association between patient safety culture and voluntary reporting of near-miss incidents, with key factors such as non-punitive responses to errors and management support for safety playing a stronger role. The electronic reporting system acts as a critical mediator, with perceived ease of use and perceived usefulness influencing reporting behaviours. However, barriers such as workload burden, fear of blame, and lack of feedback

mechanisms continue to hinder voluntary participation. This study extends the Theory of Planned Behaviour and the Technology Acceptance Model within the healthcare reporting context, highlighting the interplay between organizational culture and technology in patient safety reporting. Practical implications include fostering a just culture, providing continuous feedback on reported incidents, and improving electronic reporting system accessibility. Future research should explore the impact of specific interventions, including diverse healthcare roles, and long-term trends in reporting improvements following interventions.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter explores the complex relationship between patient safety culture and the voluntary reporting of near-miss incidents among nurses, specifically within Al Dhafra Hospitals. Patient safety is a critical marker of healthcare quality and fostering a culture that supports incident reporting is essential to reducing preventable harm. Near-miss incidents, although they do not result in direct harm, offer valuable insights into potential system failures and present opportunities for proactive improvements.

1.2 Background of the Study

The healthcare industry is one of the largest and most diversified industries in the world. The safety of patients is one of the most important and visible aspects of high-quality healthcare, yet preventable medical errors remain a significant global challenge. World Health Organization defined patient safety as “reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum” (Elmontsri et al., 2017). Addressing these challenges through robust safety cultures and reliable reporting systems is crucial to reducing adverse events and promoting patient safety (El-Sherbiny, Ibrahim, & Abdel-Wahed, 2020).

The World Health Organization (WHO) estimates that in hospital care, one in ten patients suffer harm because of various adverse events, and approximately 42.7 million adverse events occur globally during hospital stays (WHO, 2019). Preventable factors are responsible for nearly fifty per cent of these incidents. Surgical

interventions result in disabling complications for at least 7 million patients each year, with over 1 million fatalities attributed to these complications (WHO, 2019). Medical errors are believed to be the third leading cause of death in the USA (Farag et al., 2019; Han et al., 2020; Schwendimann et al., 2018b). From a financial perspective, it has been estimated that the yearly expenditure attributed to medical errors in the United States amounts to approximately 19.1 billion dollars (Mousavi-Roknabadi et al., 2019).

Safety records are much better in high-risk industries like aviation and nuclear power plants compared to healthcare. According to WHO (2019) estimates that the likelihood of mortality while flying is 1 in a million, whereas the probability of mortality from preventable accidents in healthcare is 1 in 300. Furthermore, according to a reliable study by the WHO conducted at 26 international hospitals, 83% of healthcare-related incidents are avoidable, whereas 30% of those occurrences directly or indirectly result in fatalities (WHO, 2019). At the international level, one out of 10 patients is harmed while receiving medical care.

The healthcare system is a complex system where experts with different specialties from various backgrounds and cultures, technology, and medical equipment interact within a constrained timeframe to perform specific procedures intended to improve and promote patients' health. Healthcare industry is classified as a safety-critical industry because of the fatal outcomes that result from errors or improper design of the system and processes (Elmontsri et al., 2018). The increasing number of patients' medical operations impose huge complexities on the healthcare system, showing the need to make the system more equipped, safer, and relevant to the changing patient conditions.

Patient safety is widely recognised as a fundamental indicator of healthcare quality and a significant challenge for modern healthcare systems. Healthcare management has emphasised the urgency of improving patient safety. Effective reporting of medical incidents by healthcare professionals is crucial to addressing this problem and preserving patient safety (Dimova et al., 2018). Improvement in healthcare services must first begin with an accurate assessment of the safety culture present in the organization. It is essential to consider the prevailing organizational culture and related variables influencing the safety culture and voluntary reporting incidents, including near-misses (El-Sherbiny et al., 2020).

Research shows a significant correlation between patient safety culture within healthcare organizations and the quality of treatment delivered. Therefore, patient safety culture is widely recognised as a crucial component that determines the level of care patients receive (Reis et al., 2018). One essential element in minimising patient harm in healthcare organizations is reporting incidents, this will allow the management to investigate and analyse the underlying reasons for the incident and implement actions to minimise the reoccurrence of the same incident or the escalation of minor ones to more serious or catastrophic events. Despite improvements in reporting among healthcare professionals, a significant number of healthcare incidents continue to go unreported (Hamilton et al., 2018). Many studies have revealed that 50% to 96% of medical errors were underreported by nurses (Chiang et al., 2019; Woo & Avery, 2021).Because of incidents underreporting, health care professionals will miss opportunities to learn from each other through sharing lessons from the incidents.

Globally, there is a persistent issue of underreporting incidents in healthcare. This trend hampers the identification of safety risks, reducing the ability to implement preventive measures and improve patient safety outcomes (Mousavi-Roknabadi et al.,

2019). Underreporting of incidents is a major drawback in the process of improving healthcare services and preventing patient harm. Reporting incidents is known as the best and most efficient method of minimising hospital medical errors (El-Sherbiny et al., 2020). Near-misses, known as those incidents, happened and almost harmed the patient but did not because of chance, prevention, or mitigation. While adverse events known as those incidents caused patient harm, the pathway of near-misses is the same as an adverse event that caused harm. In healthcare, the frequency of near-miss incidents is higher than in most other high-risk industries and known to account for over 50% of all incidents. Despite their significant prevalence. Near misses were frequently underreported. Recording these events was perceived as futile and an additional burden without a viable solution (Chiang et al., 2019; Song & Guo, 2019; Van Spall et al., 2015; Woo & Avery, 2021). Near-misses can be viewed as red flags that require management attention, reporting them can assist with testing the healthcare system, quality improvement, and patient safety initiatives.

Patient safety and care outcomes improve when the underlying reasons for reported incidents are identified, and corrective measures are taken. The most common reason for not reporting near-misses based on nurses' feedback is that no harm happened, which makes it unworthy to report by healthcare providers, forgetting the main aim of reporting, which is solving the implicit causes and sharing the lessons learned after fixing the issue (Franklin et al., 2014; Kavanagh & Ward, 2024; Yung et al., 2016). Near-misses are likely to occur several times in a life cycle prior to an undesirable related event happening. Besides that, upon a review of death cases in healthcare settings, many number of preventable deaths have been related to near-miss incidents before death occurred (Isaksson et al., 2022; Van Spall et al., 2015; Woodier et al., 2023).

The current process of reporting incidents relies solely on the voluntary of employee to disclose safety issues, in particular near-misses, since no harm reached the patient, incidents can easily go unnoticed by other staff or the organization's management. Healthcare leadership should view this type of incident as a window of opportunity and a free lesson to improve the standard of care given, resolve the system's problems, and increase patient safety (El-Sherbiny et al., 2020; Van Spall et al., 2015). Investment in reporting, analysis and management of near-miss incidents shall prevent potential future incidents.

The value of all types of incidents comes from the staff's voluntary to report and desire to learn from them. Healthcare professionals can recognise and reporting various types of incidents, but they are more willing to report medical errors that cause harm than near-misses (Dimova et al., 2018). Healthcare professionals frequently choose not to report patient safety events despite the numerous advantages gained by doing so for various reasons. Expanding understanding of nurses' voluntary to report is essential to preventing healthcare errors through effective reporting (Lee et al., 2021). Because of the underreporting of near-miss incidents, little is known about their effects, contributing factors, and intentions to report them. The influence of patient safety culture on the voluntary to report near-miss incidents has not been fully explored; examining this kind of relationship is recommended as it can be highly impact patient safety (Yang & Liu, 2021).

The focus in this study is the near-miss incident type, where the no-harm feature can help the nurses' report more without fear of blame which is one of the main drawbacks identified in minimising the voluntary of reporting incidents (Yang & Liu, 2021). The primary focus in the management and analysis of near-miss incidents lies on the system and processes implemented, rather than the individuals involved.

Healthcare facilities were encouraged to implement incidence reporting systems supported by training and policies to facilitate and promote reporting practices, aiming to enhance and motivate the act of reporting. Electronic types of incident reporting systems were widely adopted, with features like anonymous reporting options to increase, facilitate, and streamline the reporting process. Patients will continue to suffer harm while receiving care if underreporting of incidents in the medical field is not addressed. Because the current reporting system heavily depends on healthcare providers voluntary to report incidents, it is crucial to create a culture of safety where employees feel at ease doing so. This culture construct begins with precisely assessing the organization's current safety culture. This will assist leadership in identifying and highlighting the critical components that need improvement to promote patient safety.

This study aims to examine the relationship between patient safety culture composites (PSCC) and voluntary reporting near-miss incidents (VRNM) among nurses working in Al Dhafra Hospitals. Patient Safety Culture Composites (PSCC) refers to specific dimensions that collectively characterise the safety culture within a healthcare organization, following the definitions provided by the Agency for Healthcare Research and Quality. The PSCC framework includes the ten composites, each of which captures distinct aspects of patient safety culture. Each composite, representing either unit-level or hospital-wide dimensions (Noureldin & Noureldin, 2021). In this study the PSSCC in this study serves as an independent variable, uniquely influencing the likelihood of voluntary near-miss reporting. Meanwhile, Patient Safety Culture Compliance pertains to adherence to established safety protocols, standards, and regulations. This study additionally examines the function of the existing voluntary electronic incident reporting system (ERS) in enhancing the

reporting process of near-misses to assist and advise nursing leaders in their efforts to enhance patient safety and develop strategies for mitigating patient harm.

1.3 Problem Statement

Preventable medical errors have become a significant issue facing the modern healthcare system; there is an urgency to reduce preventable medical errors to the minimum as soon as possible. Despite initiatives to promote voluntary reporting by healthcare professionals and implementing reporting system, harm to patients caused by the healthcare system or care providers still exists and is also underreported (Zhao et al., 2021). Undesirable incidents continue to rise universally, emphasising the need to concentrate on carers' voluntary to disclose incidents to build a less hazardous and more open environment that will improve patient outcomes and strengthen staff members' commitment to patient safety.

Patient safety can be improved by examining patient safety culture among staff and implement actions to improve voluntary reporting incidents. However, in the examination of this topic, it is important to recognise patient safety culture as a complex phenomenon that is not clearly understood by hospital leaders, thus making it difficult to operationalise. The organization's safety culture and care outcomes are impacted by cultural variations between nations, such as cultural norms, race, religion, and individual employee characteristics; to customise interventions and plans to improve patient safety, it is highly advisable to study the safety culture composites within specific nations' cultural contexts. A statistically significant relationship is expected between socio-demographic information and PSCC (Bartoníčková et al., 2019).

Underreporting of incidents is a significant issue; failure to report by caregivers is one of the main factors that hinder organizations from collecting, aggregating safety related data, and learning from medical errors (Hong & Li, 2017; Scott et al., 2021). Healthcare managers can increase patient safety by reporting incidents early using an efficient reporting system. One of the fundamental elements of boosting patient safety in healthcare is using a reliable, trusted, and easy-to-use reporting system. WHO recognises the reporting system as the cornerstone of safe practice in the healthcare setting, many countries adopt a different type of reporting system for improving the care provided through monitoring and reporting incidents. Although multiple reporting systems are available and utilised, near-misses and adverse events continue to be underreported in the healthcare setting (Hamilton et al., 2018).

Studies across Arab countries have consistently highlighted the significant underreporting of incidents in healthcare settings. For instance, a study involving 308 nurses from 15 hospitals revealed that only 26.2% consistently reported cases where patients received incorrect treatments or procedures, showing a considerable gap in reporting (Oweidat et al., 2023). Similarly, a comprehensive national study encompassing 145,657 healthcare practitioners across 392 hospitals found that nearly 75% reported zero to two safety events over the past year (Alkahf & Alonazi, 2024). These findings underscore the urgent need for a non-punitive reporting culture to encourage accurate and regular incident documentation. Burlison (2020) concluded that patient safety culture should not be expected to fully predict voluntary event reporting since it does not evaluate factors that show the perceived ease of reporting, such as the accessibility and functionality of ERS. Therefore, it is recommended to study the effect of ERS with patient safety culture (Burlison et al., 2020).

In a healthcare setting, reporting practices are mostly outcome-based, means that the decision to report is based on the incident's outcome and whether or not the incident resulted in a negative outcome or patient harm, and since there is no harm happened, most of those near-misses went unreported (Caspi et al., 2023; Hewitt et al., 2016). According to the literature, underreporting incidents is the biggest obstacle to improve patient safety and minimising medical errors. As a result, there is an urgent need to investigate this issue (Mousavi-Roknabadi et al., 2019).

Lack of voluntary to report medical errors can jeopardise patient safety. Medical professionals are reluctant to report safety issues because of a lack of employees' trust in the organization management's response to reporting, fear of reporting consequences and belief that there will be no improvement after doing so (Zhao et al., 2021). Moreover, findings from an analysis of 1,380 frontline nurse responses from six Taiwanese teaching hospitals show that nurses in the healthcare sector are more reluctant to report incidents and are still modestly in agreement with reporting (Chiang et al., 2019). Because of the unique characteristics of near-miss incidents, it is recommended to investigate the circumstances of the near-miss incidents to improve patient safety (Hamilton et al., 2018; Ruddy et al., 2015; Vrbnjak et al., 2016; Woo & Avery, 2021).

Most hospital professionals are nurses who contribute mainly to recognising and reporting safety patient-related issues (Chen et al., 2018; Farag et al., 2019). Nurses are positioned uniquely to notice and resolve patient safety issues due to their close interactions with patients while working in hospital settings. Nurses may identify potential health risks early and alert other medical staff to them. Nevertheless, nurses are occasionally less inclined than other healthcare professionals to express concerns regarding patient safety issues in hospital environments (Lee et al., 2021). The

organizational culture of patient safety can highly influence healthcare professionals' reporting practices and their voluntary to report. Acquire insight into the impact of leadership behaviours and organizational culture on incident reporting practices can aid healthcare organizations in formulating effective measures to enhance patient safety. There is limited research that investigates the nurses' perspectives regarding the impact of leadership behaviours and organizational culture on their practices of reporting patient safety incidents (Al-Oweidat et al., 2023). Nursing leaders should be aware of what elements improve or decrease nurses' voluntary to speak up. Therefore, it is important to study error-reporting behaviours among nurses and the impact of PSCC on the voluntary of reporting incidents, in particular, near-misses in this study.

In summary, the problem statement addresses the persistent underreporting of near misses in ADH because of the absence of a positive patient safety culture and the ineffective use of electronic reporting systems. The study focuses on understanding how patient safety culture and leadership influence nurses' voluntary reporting of near misses to foster a safer healthcare environment.

1.4 Research Questions

There are four-research questions that this study attempts to answer:

i) What is the current status of patient safety culture composites among nurses in ADH?

ii) What is the relationship between patient safety culture composites and voluntary reporting near-miss incidents?

iii) What is the relationship between the electronic reporting system and voluntary reporting near-miss incidents?

iv) Does the electronic reporting system mediate the relationship between patient safety culture composites and voluntary reporting near-miss incidents?

1.5 Research Objectives

The main objectives of this thesis:

i) To examine the current patient safety culture among nurses in ADH.

ii) To investigate the relationship between patient safety culture composites and voluntary reporting near-miss incidents.

iii) To examine the relationship between the electronic reporting system and voluntary reporting near-miss incidents.

iv) To examine the mediating effect of the electronic reporting system on the relationship between patient safety culture composites and voluntary reporting near-miss incidents.

Through analysing the results of the modified AHRQ surveys and the results of the hypotheses proposed in chapter 2, the researcher will attempt to answer the research questions and achieve the related objectives.

1.6 Scope of the Study

Al Dhafra Hospitals is a premier medical institution located in Al Dhafra region of the United Arab Emirates. ADH is Part of Abu Dhabi Healthcare Services Company (SEHA, corporate marketing name), the largest healthcare network in the UAE. ADH consists of six hospitals and four primary healthcare clinics. The hospitals are located

geographically in the western region of the emirates of Abu Dhabi and managed by a single governing body that oversees the six hospitals. Newly hired nurses are enrolled in a unified induction programme, receiving the same orientation and training on ERS used to report incidents. The scope of this study includes all nurses working at ADH. namely, Madinat Zayed, Ghayathi, Marfa, Delma, Liwa, and Silla hospitals. The population of the study includes nurses who completed the probation period of 3 months after joining ADH and have completed the orientation programme, including training on ERS. According to statistics from the Human Resources Department at ADH, the total number of nurses across the six hospitals who have successfully completed the probationary period is 444, as illustrated in Figure 1.1.

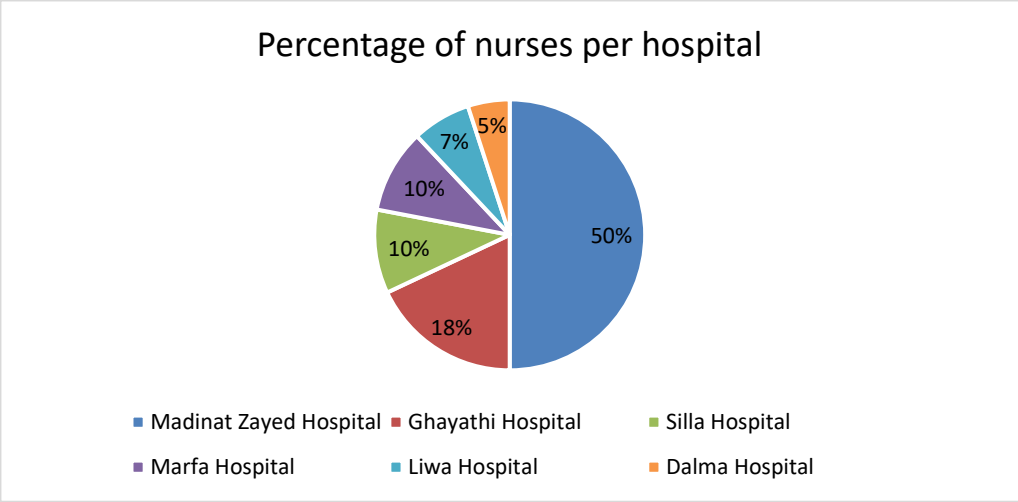

Figure 1.1 Percentage of nurses per hospital in ADH

There is a strong relationship between the score of the patients' safety culture and the outcome of nursing care on patients; a high score of patient safety culture among nurses has proven to be linked with lower missed nursing care (Hessels et al., 2019). Moreover, in addition to their vital role in promoting and enhancing patient safety, nurses considered the primary patient advocates with a major role in safeguarding patients. Assessing the voluntary of reporting near-miss incidents among

nurses provide a proximal overview to the actual status and behaviour toward reporting (Chiang et al., 2019). The results of this study assessment can assist the organization in creating a successful patient safety initiative.

The scope of this study attempts to assess the patient safety culture in ADH among nurses. In addition, identifies the main contributors form unit level to hospital level of safety composites that shape the PSCC score and study its relationship with VRNM through utilising the current voluntary ERS in place from the nurses' perspective in ADH.

1.7 Significance of the Study

Both the theoretical and practical significance of the research are objectively identified based on the potential value addition it can bring.

1.7.1 Theoretical Significance

This study adopted the Theory of Planned Behaviour (TPB) and technology acceptance model to understand the relationship between nurses' perceptions of (PSCC) and voluntary reporting near-miss incidents (VRNM). The study's approach aligns with recent calls in the literature (e.g., Chegini et al., 2020; Alingh et al., 2019) to expand models that can predict and improve voluntary reporting. By addressing the interplay between organizational culture and the technology acceptance of ERS, the study sets a foundation for developing new theoretical frameworks that support voluntary reporting of errors and near misses. This study's framework can guide healthcare policies to foster a culture where staff feel safe to report incidents, driving improvements in both patient safety and organizational learning. The proposed framework in this study shall help to understand and explore the type of relationship

that exists between how nurses perceive and feel about the PSCC and how this perception affects the voluntary of reporting near-miss incidents. The analysis of this exploration will help the healthcare leadership to understand individual and systemic issues with reporting near-misses to provide and recommend measures that help staff report incidents more comfortably. This framework will also help in understanding the role of ERS in the reporting process of near-misses from nurses' perspective to guide proactive strategies to decrease errors and harmful incidents in the patient care and staff's environment. Therefore, it is highly recommended to develop theories or frameworks to clarify and anticipate voluntary of reporting medical error and adoption of incident reporting system (Zhao et al., 2021).

Many studies linked organizational culture and perception toward safety with the rate of adverse events and errors reported (Chiang et al., 2019; Elmontsri et al., 2017; Han et al., 2020; Najjar et al., 2015). Other Studies also have discussed the voluntary of reporting medical error among healthcare professionals (Chiang et al., 2019; Lee et al., 2021; Yang & Liu, 2021; Zhao et al., 2021). The current study focuses on correlating the ten introduced PSCC (independent factors) with the voluntary reported near-misses (the dependent variable in this study). The study also attempts to investigate the role of ERS as a method of reporting near-misses. Using electronic systems to collect, save, and analyse data has many advantages in the reporting process; however, when targeting the near-misses that happened more frequently among all types of errors and at the same time were least reported, it is essential to examine whether the ERS is in favour or not as the preferred mode of reporting among nurses. By specifically correlating ten PSCC factors (independent variables) with the voluntary reporting of near misses (dependent variable), the framework addresses the gaps highlighted in previous studies, such as those by Chiang et al. (2019) and Zhao

et al. (2021), on how organizational culture impacts error-reporting. The study's focus on frequently overlooked near misses provides a unique addition to the literature on patient safety by identifying patterns that could be essential in reducing adverse events through enhanced voluntary reporting mechanisms.

Due to the importance of voluntary to speak up for the best of patients' care. Researchers have identified the need to study the relationship between organizational culture and the voluntary of staff to report incidents. Despite the importance of studying the factors affecting the reporting process, limited research has examined the impact of nurses' perceptions of patient safety culture on their willingness to report errors voluntarily (Chegini et al., 2020). With nurses often hesitant to report near misses due to individual and systemic factors, this study makes a significant contribution by examining how these perceptions, combined with organizational and technological factors, impact reporting frequency. This focus on nurses' perspectives is particularly valuable given their pivotal role in patient safety monitoring. By recognising near misses as red flags, this research provides a framework for leadership to preemptively address errors and reinforce a culture of safety. Due to the unique characteristics of near-misses, it is important to study this type of event to extend pertinent literature on the frequency of reporting this type of event among nurses. More research is required to examine organizational issues at the hospital and departmental levels to understand the variance in patient safety (Alingh et al., 2019; Han et al., 2020).

There is a trend of underreporting near-misses among nurses, and studies have shown that factors like the type and outcome of incidents play a significant role in deciding whether to report or not. Individual and system issues can weaken nurses' determination and voluntary in reporting incidents, especially those hidden and

unnoticed types like near-misses (Noureldin & Noureldin, 2021). Voluntary to report is strongly connected to how the nurses view near-misses in the process of enhancing patient safety and preventing errors; hence, it is essential to explore the nurses' voluntary of incident reporting to enhance patient safety (Chiang et al., 2019).

By framing the study within TPB, it provides a structured approach to understanding the factors that drive or inhibit near-miss reporting. Specifically, nurses' attitudes toward reporting, social pressures or norms within the organizational culture, and perceived control over the reporting process (including access to and ease of using the Electronic Reporting System) are all critical elements of understanding and predicting reporting behaviour. This theoretical perspective aligns with calls in the literature to explore the predictors of incident-reporting behaviour in healthcare settings (Chegini et al., 2020; Alingh et al., 2019).

Incorporating TPB and TAM together enables the study to bridge organizational cultural factors (which influence norms and perceived behavioural control) with the acceptance of technology (ERS). The combined framework suggests that while attitudes and cultural norms initiate motivation for reporting, the ERS serves as a practical tool that facilitates action by making reporting more accessible. This framework adds to what has already been written by looking at the unique way that TPB concepts interact with technology use. This gives us a better understanding of how healthcare policies can encourage people to report things voluntarily by using both technological and cultural changes.

1.7.2 Practical Significance

This study determines the nurses' role in reporting near-misses incidents. Nurses are the largest healthcare professionals in hospitals, and they are the primary

direct service provider for patient care in hospital settings. Therefore, it is highly important to study the perception of nurses towards the safety culture and incident reporting practices. The major role that nurses play in enhancing patient safety through reporting incidents should be highlighted. Such exploration of the perception of nurses shall provide reliable data to the management and policymakers for planning and executing improvement projects at the hospital level (Chiang et al., 2019). Primarily, the key stakeholders who will benefit from this research are (a) nurses, (b) patients, (c) hospital management, and (d) any other stakeholders who are directly or indirectly associated with this phenomenon.

A vital outcome measure from conducting safety culture surveys in healthcare settings is that they may be utilised as guides for proactive initiatives to decrease errors in patient care and the work atmosphere. Evaluating safety culture, including underlying values and norms in healthcare settings like hospitals will expand knowledge of safety culture and shed light on nurses' difficulties while utilising the ERS to record incidents. At the same time, it will help the administration and policymakers in the healthcare setting to carefully evaluate the present perception of safety composites for better planning and executing safety initiatives that will reflect in the overall outcome of care provided. In addition to the above, the interpretation of the results will identify the areas of strengths and weaknesses among nurses in ADH in terms of safety practices and safety culture. Such in-depth analysis will help to understand the nurses' greater areas of weakness and be the centre of attention.

Without proper reporting followed by appropriate analysis to eliminate the root causes of any problem, incidents will still exist and lead to patient harm. Near-misses in nature do not affect patients as no harm caused. However, the pathway of occurrences is common between the adverse event and the near-miss incidents. With

increased reporting of near-misses, the possibility of having near-misses escalate into harmful events is minimised. In addition to the above, this study assessed the role of ERS and the voluntary of nurses to use it to report near-misses, aiming to correct and improve the related processes to smooth the reporting among nurses from a system perspective. Healthcare executives should understand what influences nurses' voluntary to raise safety concerns and report incidents, and they should adopt measures to encourage nurses to report in order to increase the standard of care (Lee et al., 2021).

1.8 Organization of Chapters

Chapter 1 is the introduction to this thesis and provides a summary of the problem statement, background and historical perspective of the study, research gap, research questions, research objectives, and theoretical and practical significance of this thesis. The scope of this study, the thesis of organization, and operational definitions of terms provided. Chapter 2 describes the literature review of the topic in relative detail, covering all the main aspects of the research thesis. Chapter 3 provides an overview of the research methodology design, including study design, survey design, data collection and procedure, and lastly, data analysis. Chapter 4 examines the results of the research, its major findings, and its different composites. Chapter 5 states the conclusions drawn from our work and suggests possible recommendations and directions for future research.

1.9 Definition of Terms (Operational Definitions)

Adverse event is an unintended physical injury resulting from or contributed to by medical care that requires additional monitoring, treatment or hospitalization, or that results in death (McQueen et al., 2022).

Electronic reporting system: a web-based portal used by healthcare to report all type of event through a series of standardized screens with pull-down response choices designed to collect information on event demographics including time, location, and service, and personnel involved, as well as type of event, contributing factors, impact on patient care, and subsequent patient outcome (WHO, 2020) .

Just culture: is defined as processes within organisations that are implemented in order to achieve a fair decision on actions to be taken with individuals involved in either adverse safety occurrences or near misses (Murray et al., 2023).

Near-miss: an unexpected event that has the potential to cause harm to a patient or interrupt normal operations, but did not actually harm a patient or cause any interruption to normal operations (Fukami et al., 2020).

Patient harm: an incident that results in harm to a patient such as impairment of structure or function of the body and/or any deleterious effect arising there from or associated with plans or actions taken during the provision of healthcare, rather than an underlying disease or injury, and may be physical, social or psychological e.g., disease, injury, suffering, disability and death (Panagioti et al., 2019).

Patient safety: a framework of organized activities that creates cultures, processes and procedures, behaviours, technologies, and environments in health care that consistently and sustainably: lower risks, reduce the occurrence of avoidable harm, make error less likely and reduce its impact when it does occur (WHO, 2020).

Patient safety culture composite: The Agency for healthcare Research and Quality has already identified many PSCC that expected to influence patient safety outcomes. There are seven factors that focused on the psychosocial environment of the

Unit: Seven factors focus on the psychosocial environment of the Unit: Communication openness (CO), Feedback and communication about error (FCE), Supervisor/manager expectations and actions promoting safety (Farag et al.), Teamwork within units (TWU), Non-punitive response to error (NRE), Organizational learning- continuous improvement (OL), and Staffing (ST). Three factors focus on the psychosocial environment of the hospital: handoffs and transitions (HT), management support for patient safety (MSP), and teamwork across units (Westat et al., 2018).

Safety culture: the result of individuals and groups' beliefs, attitudes, competencies, and behavior patterns. It defines the commitment to and the style and efficiency of an organization's safety and health management (Arzahan et al., 2022).

Voluntary of reporting: the voluntary of reporting involves one's perception agreement, intention, and willingness to self-report medical incidents, including errors and near-misses (Chiang et al., 2019).

1.10 Chapter Summary

Chapter 1 provides an overview and a brief background to the research, which examines nurses' perceptions of PSCC and incidence reporting of near-misses. The background of safety culture discussed locally and internationally, and the past research made on the same topic in different contexts. Furthermore, the research problem and its significance were discussed, and the theoretical and practical significance of safety culture to patient safety and the characteristics of an effective safety culture were presented in addition to the research questions and objectives. The organization of the thesis is also presented to understand the overall research plan.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on patient safety culture and its impact on voluntary incident reporting, particularly near misses. It examines organizational and technological factors contributing to underreporting, with a focus on nurses as frontline caregivers. The review explores high-reliability organizations, global and regional perspectives, and frameworks influencing reporting behaviour. It highlights gaps in research and sets the foundation for analysing how patient safety culture and electronic reporting systems affect reporting in healthcare, particularly in the UAE.

2.2 Overview of Healthcare Industry

Preventable medical error in healthcare become a worldwide issue and a priority that needs to be addressed at all levels. Following the release of the Institute of Medicine's report in 2000, titled To Err is Human: Building a Safer Health System Patient safety has emerged as a paramount goal for healthcare systems owing to the heightened awareness of risks linked to medical care (Alonso et al., 2024). According to reliable studies in healthcare, at least one patient out of every 20 suffers from avoidable harm. Approximately 12% of those errors result in patient deaths or permanent disabilities (Panagioti et al., 2019). Although a remarkable effort was made to minimise the possibility of errors, no significant decrease in patient harm was noticed, and there is a huge room for improvement in patient safety as most healthcare errors remain unreported (Hamilton et al., 2018).

Reporting incidents is one of the safety improvement strategies that can be utilised more efficiently to promote patient safety in the current complex healthcare system through sharing knowledge and lessons learned after in-depth analysis of the main and contributing factors of the incident. Improving patient safety continues to be challenged due to the underreporting of incidents. Thus, it becomes essential to record and learn from incidents that happen. Elmontsri et al. (2017). Conclude in his systematic review of safety culture in Arab countries that the culture of blame still exists, and it restrains staff from reporting. Assessing safety culture will provide management with a better understanding of staff concerns related to reporting incidents without fear (Elmontsri et al., 2017). The healthcare system in the United Arab Emirates (UAE) has undergone significant development. Over nearly two decades, the life expectancy at birth has experienced a notable increase of 2.9 years, rising from 73.2 years in 2000 to 76.1 years in 2019. Compared to the global context, the life expectancy at birth is 73.3 years in 2019 (WHO, 2023). The UAE's well-developed healthcare system strongly emphasises patient safety and error avoidance by encouraging reporting. To enhance the reporting process, the operating body of the governmental healthcare sector in Abu Dhabi introduced a new reporting system in 2009, the Patient Safety Net (PSN) by the University Healthcare Consortium (UHC) (Edrees et al., 2017).

2.3 Incidents in Healthcare Organizations

Any incidents that occur in healthcare organizations have the possibility of causing patient harm. Near-misses are those incidents that happened but did not harm the patient. While, adverse event is defined as an involuntary physical harm that is caused by a slipup in medical care and is not intensified by the severity of the patient's

disease but could be avoided by proper observation, cure, or hospitalization (Grossmann et al., 2019).

Around 3.2%–16.6% of all patients in Switzerland hospitals are affected by at least one adverse event (Grossmann et al., 2019). As per a study conducted in Denmark, patients with adverse event have a higher cost around 9505 Euro over hospital stay (Kjellberg et al., 2017). Hospitals in Egypt, Jordan, Kenya, Morocco, South Africa, Sudan, Tunisia, and Yemen participated in a study to determine the frequency and type of events patients experienced. According to the study results, 8.2% of the 15,548 records examined contained at least one adverse incident, 83% of these incidents were determined to be preventable. The study also discovered that 30% of these incidents involved a patient's death (Elmontsri et al., 2018).

Although no harm has happened yet, Near-misses are considered precursors to medical errors and alarm signals related to malfunctions in the healthcare system. Near-misses could happen many times before a real harmful event occurred, compared to adverse events, not much attention is given toward near-miss incidents, although near-miss can offer same learning opportunities without harm caused, reporting near-miss can be also challenging since near-misses are less visible and no harm reached the patient (Yang & Liu, 2021). Without accurate and timely reporting, near-misses could become more serious incidents that might harm patients.

AHRQ defines Preventable Events as "an adverse event which could be avoided by any standard mean of care" (AHRQ, 2019). Such events consider a typical concept of an act of commission, where something wrong done, and/or act of omission, where the right action or what was supposed to be done is not done (AHRQ, 2019). As per the estimation by WHO, 15% of total health cost in Organization of Economic Co-

operation and Development (OECD) countries is because of adverse event. OECD countries consist of 38 countries in North and South America, Europe and Asia–Pacific, such expenses include charges against hospitalization, expenses on medication, cost incurred on legal procession, cost because of infections, disability or loss of productivity. Mentioning similar effect in monetary form, in USA alone, as a results of implementing targeted safety initiatives between 2010 and 2015, around US$ 28 billion saved (WHO, 2019).

Based on a systematic assessment of 48 research studies from 16 countries, between 14% and 71% of adverse events were preventable incidents and increased to 94.6% in primary care service (Gens-Barberà et al., 2021; Hibbert et al., 2016). Additionally, a study performed in Swiss hospitals revealed that nearly 42% of reported occurrences can be classified as preventable events, and approximately 12% of all hospitalised patients experienced at least one adverse event (Halfon et al., 2017). Moreover, 25 studies were conducted in 27 countries across six continents. A median of 10% of patients experienced at least one adverse event (AE), with a range of 2.9% to 21.9%. Additionally, a median of 7.3% of AEs were fatal, ranging from 0.6% to 30%. Between 34.3% and 83% of adverse events were deemed preventable, with a median of 51.2% (Schwendimann et al., 2018a). Additionally, as recognised by a study conducted at a university hospital in Switzerland that out of 336 adverse events, 29% events categorised as preventable. The most common preventable event recorded in this study are pressure ulcers, urinary retention and surgical complications (Grossmann et al., 2019). in other recent systematic review for studies published from 1 January 2001 to 27 October 2021, including 367 reports, Those most frequently reported were wrong body part, wrong surgical procedure, unintentionally retained foreign objects