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The predictive power of electronic reporting system utilization on voluntary reporting of near-miss incidents among nurses: A PLS-SEM approach

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Abstract

Background: Patient safety is crucial in healthcare, with incident reporting vital for identifying and addressing errors. Near-miss incidents, common yet underreported, serve as red flags requiring attention. Nurses' underreporting, influenced by views and system usability, inhibits learning opportunities. The Electronic Reporting System (ERS) is a modern solution, but its effectiveness remains unclear.

Objective: This study aimed to investigate the role of the ERS in enhancing the voluntary reporting of near-miss (VRNM) incidents among nurses.

Methods: A cross-sectional study was conducted in the Al Dhafra region of the United Arab Emirates, involving 247 nurses from six hospitals. Data were collected using a questionnaire between April 2022 and August 2022. Structural Equation Modelling Partial Least Square (SEM-PLS) was employed for data analysis.

Results: The average variance extracted for the ERS construct was 0.754, indicating that the common factor accounted for 75.4% of the variation in the ERS scores. The mean ERS score was 4.093, with a standard deviation of 0.680. For VRNM, the mean was 4.104, and the standard deviation was 0.688. There was a positive correlation between ERS utilization and nurses' willingness to report near-miss incidents. Additionally, our research findings suggest a 66.7% relevance when applied to various hospital settings within the scope of this study.

Conclusion: The findings suggest that adopting a user-friendly reporting system and adequate training on the system's features can increase reporting and improve patient safety. Additionally, these systems should be designed to be operated by nursing staff with minimal obstacles.

Keywords

United Arab Emirates; nurses; electronic reporting system, near miss; patient safety; hospitals; cross sectional; healthcare

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Background

The current healthcare industry grapples with a significant challenge: ensuring patient safety. Research demonstrates a direct correlation between the culture of patient safety and the quality of care provided (Reis et al., 2018). Patient safety is crucial, reflecting patients' protection from harm during medical care. Reporting incidents is a strategy to bolster patient safety and reduce harm within healthcare settings. Incident reports facilitate management investigations into the root causes, knowledge sharing, and implementation of corrective measures. Conversely, underreporting incidents creates missed opportunities to address and rectify their causes (Hamilton et al., 2018).

Our study focuses on near-miss incidents, defined by the World Health Organization as "errors that have the potential to cause adverse events (patient harm) but fail to do so due to chance or interception" (World Health Organization, 2005). In healthcare, near-miss incidents occur more frequently than in many other high-risk industries, accounting for over 50% of all incidents. Unfortunately, these near misses are not accurately categorized, recorded, or studied (Van Spall et al., 2015). Viewing near misses as red flags requiring management attention and reporting them can contribute to testing the healthcare system, improving quality, and advancing patient safety initiatives. Thus, a robust institutional framework for error management is essential to regular and willing reporting of errors by healthcare personnel (Poorolajal et al., 2015).

Several studies have indicated that nurses underreport a significant proportion of medical errors, ranging from 50% to 96% (Chiang et al., 2010; Pham et al., 2013). Given the importance of error reporting in fostering a strong safety culture, the lack of dedication among nurses could lead to missed opportunities for valuable learning experiences to enhance their nursing care.

To address this issue, the use of an Electronic Reporting System (ERS) for reporting incidents in healthcare has garnered increased interest in recent years (Al-Rayes et al., 2020). It is widely accepted as a method that can enhance event recording, tracking, readability, and confidentiality (Elliott et al., 2014). Transitioning from manual reporting to an electronic system is necessary to improve the reporting process and overcome delays in results from manual data entry (Walsh et al., 2010). Traditional paper-based reporting

methods have faced criticism for deficiencies such as low reporting rates and a lack of uniformity (Walsh et al., 2010). Incident reports should include fundamental details like the date of occurrence, the ward or department, the healthcare professional's type and years of experience, the department affiliation of both the reporter and the individual involved in the incident, patient details, and information about incident classification and severity (Fukami et al., 2020; World Health Organization, 2020).

However, despite the usefulness of ERS, little is known about its effectiveness in enhancing patient safety (Stavropoulou et al., 2015). The ability of an employee to carry out a particular activity depends on several variables, including skills, capabilities, resources, and awareness of how to report incidents. This is often called Voluntary Error Reporting (VER), which denotes a nurse's willingness, dedication, and purpose to reveal and report a medical error openly (Donaldson et al., 2000).

Nurses' behavior in reporting errors is influenced by their views, affecting the actual implementation of VER (Kusumawati et al., 2019; Lee et al., 2018). Furthermore, an easy-to-use, straightforward system will encourage nurses to report near misses, so it is essential to consider how nurses perceive the ERS. If reporting near misses on the ERS is complicated or requires time and effort, it will reduce nurses' intention to report near misses (Lee et al., 2016).

Thus, the objective of this study was to investigate the role of the use of ERS in voluntary reporting of near-miss incidents among nurses. Evaluating and analyzing this relationship is essential, as it can significantly impact patient safety (Yang & Liu, 2021). The study hypothesizes that using an ERS positively influences nurses' voluntary reporting of near-miss incidents.

Methods

Study Design

A cross-sectional design was employed in this study.

Samples/Participants

The study involves nurses employed at Al Dhafra Hospitals (ADH) in the United Arab Emirates (UAE) who have completed a three-month probationary period. ADH is a leading medical institution in the Al Dhafra region of the UAE, operating within the Abu Dhabi Healthcare Services Company (SEHA), the largest healthcare network in the UAE. Comprising six hospitals managed by a single governing body, ADH's hospitals are geographically positioned in the western region of the emirates of Abu Dhabi.

The exclusion criteria for the sample included newly hired nurses, those who hadn't completed their probation period, untrained individuals, or those lacking access to the ERS. The total nurse count across the six hospitals was 444, varying based on hospital size and bed utilization.

Given the differing nurse counts across hospitals, a combination of sampling methods was employed to ensure both representation and logistical feasibility: 1) Stratified Sampling: This method involved stratifying the sample based on hospital sites, treating each hospital site as an independent stratum. Stratification aids in ensuring a proportional inclusion of nurses from each site, enhancing the representativeness of the sample. 2) Simple Random Sampling: Within each stratum (hospital site), random sampling was utilized to select nurses. This process involved randomly choosing a specific number of nurses from each hospital to constitute the sample. The proportion of recruited nurses from each hospital was relative to the total nurse count, as indicated in **Table 1**. The study specifically targets ADH nurses who have completed their probationary period and have access to the ERS.

Table 1 Minimum sample size per facility

Facility name	Number of nurses	Percentage of nurses	Minimum sample size
Madinat Zayed Hospital	223	50%	104
Ghayathi Hospital	82	18.4%	38
Silla Hospital	44	10%	21
Marfa Hospital	44	10%	21
Liwa Hospital	31	7%	15
Dalma Hospital	20	4.5%	9
Total	444	100%	208

Instruments

The questionnaire used in this study was developed by the researchers (**Table 2**). The first section is demographic or background information, including working experience in the hospital, working hours, position, and professional experience. This first section was adopted from the hospital survey on patient safety culture tool created by the Agency of Healthcare Research and Quality tool after securing approval from the survey owner (Sorra et al., 2018).

The second section is ERS, developed based on a literature review. The questions were related to nurses' awareness of the system and how familiar they are with and actively using the ERS for reporting. Also, it measures the nurse's perception of the system's usability by measuring the ease of utilizing the system and to what level the system is user-friendly. A total of six items were developed with a Likert scale from strongly disagree (1) to strongly agree (5). Five items were adapted from the study by Braithwaite et al. (2008) and one from the study by Yung et al. (2016).

The third section is VRNM, developed through a literature review. The questions were related to reporting near-miss incidence. Three items were developed with a Likert scale from strongly disagree (1) to strongly agree (5). Two items were adapted from the previous studies (Braithwaite et al., 2008; Yung et al., 2016), and one item was adopted from the study by Chiang et al. (2019).

The questionnaires were shared with a panel of experts to improve the research tool through feedback provided, and comments and recommendations from 10 experts (one quality manager, one quality and clinical review manager, one clinical lead improvement advisor, three clinical instructors, two assistant professors, and one associate professor) were

considered, such as manage the sentence in good grammatical without change the meaning of sentence, and change ambiguous word such "Frequency/ importance of reporting near-miss incidents" become "near-miss incidents reporting frequency among nurses." Face validity was done after getting the consensus of the instrument. The experts were asked to assess the items and instructions using a dichotomous scale (suitable or unsuitable).

A pilot study was done to ensure the clarity of the questionnaire. A pilot study refers to a small-scale implementation before the actual research to decide whether the created tool is appropriate, adequate, effective, and free of mistakes. Evaluating the questionnaire with a sample respondent will allow the researcher to recognize and work on the flaws (Birmingham & Wilkinson, 2003). To determine the sample size of the pilot study, Connelly (2008) and Hertzog (2008) suggested 10% of the projected sample size of the actual study. Isaac and Michael (1995) conclude that samples with N's between 10 and 30 have many practical advantages. Moreover, it was suggested that a sample of 12–25 cases is usually suitable to detect any major difficulties or weaknesses in the questionnaire (Sheatsley, 1983). Therefore, a total of 21 staff were invited to the pilot study.

The ward or unit coordinator distributed the questionnaires to the nurses. All participants were promptly directed to complete a questionnaire. This pilot study assessed the nurses' comprehension of the instrument's instructions, items, and response format. Every individual involved in the study was requested to evaluate the items using a dichotomous scale, which consisted of clear or unclear options. No items in the questionnaire posed difficulties in terms of comprehension. No major concerns were highlighted, and minor changes were made based on feedback, such as ambiguous words. The Cronbach's alpha was 0.802, which indicated an acceptable internal consistency; the average time to complete the questionnaire was 14 minutes.

Table 2 Questionnaire items generation

Variables	Items	Question number	Original question	Proposed question	References/ resources	Adapted/ adopted	Cronbach's α
Voluntariness of reporting near miss (VRNM)	3	VRNM1	Overall, I possess a positive attitude toward reporting medication errors	I am willing to report near misses if happened	(Yung et al., 2016)	Adapted	0.73- 0.83
		VRNM2	In my unit, nurses voluntarily report all near misses	In my unit /hospital, nurses voluntarily report all near misses	(Chiang et al., 2019)	Adopted	
		VRNM3	We have a non-punitive culture of reporting in my workplace	There is no punishment toward reporting near misses in my workplace	(Braithwaite et al., 2008)	Adapted	
Electronic reporting system (ERS)	6	ERS1	The training provided me with the skills to report an incident on an electronic Incident Information Management System (known and referred to as IIMS)	I am familiar with the current electronic reporting system in place	(Braithwaite et al., 2008)	Adapted	0.83-0.86
		ERS2	Reporting incidents using IIMS is a good use of staff time and resources.	I am actively using the current electronic system to record near-miss incidents	(Braithwaite et al., 2008)	Adapted	
		ERS3	Unclear about how to operate the reporting system and complete the requisite procedures	The current electronic reporting system in place is not complicated (easy to use)	(Yung et al., 2016)	Adapted	
		ERS4	Electronic Incident Information Management System (IIMS) is easy to use	Our current electronic reporting system is a user-friendly	(Braithwaite et al., 2008)	Adapted	
		ERS5	Computerized incident reports are more accurate than paper Incident reports	The current electronic reporting system is the best tool to report near misses	(Braithwaite et al., 2008)	Adapted	
		ERS6	Electronic Incident Information Management System (IIMS) improves patient safety	Using the current electronic reporting system to report near messes will improve patient safety	(Braithwaite et al., 2008)	Adapted	

Data Collection

Upon obtaining approval from the Institutional Review Board and receiving a formal authorization letter from the hospital's director, we communicated with either the director of nursing or the chief nursing officer to organize the research method. The principal investigator disseminated the anonymously filled

questionnaire via email. The research data was elucidated in the cover letter. The cover letter outlined the guidelines and explicitly emphasized that by completing and submitting this questionnaire, the nurses approved and agreed to participate in this study. During the data collection procedure, respondents were provided with the option to decline or retract their participation. The total number of nurses who completed the questionnaire was 247. Data were collected between April 2022 and August 2022.

Data Analysis

The completed surveys were kept on a secure, password-protected computer and handled as confidential information. The collected data was directly downloaded to the Excel database. The Excel data file was used for further quantitative analysis by integrating SPSS. The data were entered in IBM SPSS 24.0 and run through several standard procedures for investigating missing values and unengaged responses. Additionally, SmartPLS 3.2.8 was utilized to perform both inner and outer model assessments.

The PLS-SEM approach was used to evaluate all structures. PLS-SEM is considered an alternative to Covariance-Based Structural Equation Modelling (CB-SEM) in cases where the assumptions cannot be met or when the suggested model is built based on limited evidence (exploratory). Furthermore, PLS-SEM can be advantageous for examining the associations between each construct in a conceptual model. The PLS-SEMS approach was executed using SmartPLS 3.2.8. SmartPLS 3.2.8 offers multiple choices for creating the outer and inner models used to calculate the scores of latent variables in the research model.

However, the PLS-SEM has faced criticism from numerous researchers for its lack of consistency and potential bias (Afthanorhan & Aimran, 2020; Aimran et al., 2017). Efforts have been made to overcome these problems by introducing consistent PLS and PLS predictions, although their development is still incomplete. However, due to the exploratory nature of this study and the fact that the proposed model is not well-known in this particular context, the use of PLS-SEM is appropriate for hypothesis testing. Furthermore, it does not necessitate a strict assumption like normality or a high sample size, making it particularly advantageous for the current investigation. Another justification for utilizing PLS-SEM in this study is that the items employed to evaluate the potential construct are primarily created by our own team and validated by specialists in the specific sector.

In the outer model or validity test, an indicator is deemed valid if its Average Variance Extracted (AVE) value exceeds 0.5 or if all the dimension values of the outer loading variable are higher than 0.5 (Manfrin et al., 2019). Additionally, Cronbach's alpha is a measure of the reliability of a scale, with values closer to 1 indicating higher internal consistency (Hair et al., 2019). Composite reliability (CR) is a measure of the internal consistency of the construct (>0.70), taking into account the measurement error of the items (Hair et al., 2019).

Fornell and Larcker's criteria are used to assess the discriminant validity of constructs in a structural equation modeling (SEM) analysis (Ab Hamid et al., 2017). To meet this criterion, the square root of the AVE for each construct must be greater than the correlations between that construct and other constructs in the analysis.

Collinearity concerns were identified prior to hypothesis testing to prevent bias in calculating the path coefficients, and it should be below 5 (Hair Jr et al., 2021). The structural or inner model test was performed to forecast the causal connections among latent variables. The structural model was evaluated by utilizing metrics such as the R^2 (R square) value, which indicates the percentage of variance accounted for by the dependent variable. A bootstrapping approach was employed to evaluate the structure route coefficients and the associations or impacts of latent variables. The hypotheses were evaluated by analyzing *t*-statistics or using bootstrapping to determine their significance. Statistical significance was assessed by comparing the *t*-statistic value to the *t*-table. A *t*-value more than 1.96 and a *p*-value less than or equal to 0.05 were considered indicative of significance (Hair Jr et al., 2021).

Ethical Considerations

The researchers obtained official ethical approval from the Al Dhafra Hospital Institutional Research Ethics Committee (reference number ADH-IREC-021-00) to ensure the study complied with ethical standards. Additionally, a cover letter that explains the objective of the research and clear instructions for filling out the questionnaire was provided to participants. The cover letter also stated that by completing and submitting this questionnaire, the nurses offered their consent and agreement to participate in this study.

Results

Demographic information of the respondents

The majority of respondents, 35.2%, reported having 1 to 5 years of experience, while the next largest group, 34%, had 6 to 10 years of experience. However, the smallest number of respondents, at 1.2%, had less than one year of experience. The subsequent question inquired about the duration the respondents had been working in their current unit within the hospital. The majority, 36.4%, had 6 to 10 years of experience on the current hospital teams, with those having 1 to 5 years of experience ranking second. Respondents with less than one year of experience in the same teams constituted the smallest group, accounting for 2.8% of the total. In addition, the majority of respondents, comprising 89.9% of the total, worked 40 to 59 hours per week. The next most common range was 20 to 39 hours per week, accounting for 8.9%. It was observed that the majority of respondents, 88.7%, were registered nurses. Regarding direct contact with patients, 98% of respondents reported having direct contact. Within the profession, 31.2% of respondents had 11 to 15 years of experience (**Table 3**).

Outer Model Assessment Results

Factor analysis was conducted on six items, assessing two constructs: ERS and VRNM. The ERS construct comprises six items, with only ERS2, ERS3, and ERS4 retained, as three items had loadings below 0.5. These items gauge electronic support systems, having loadings on the common factor ranging from 0.840 to 0.900. The Cronbach's alpha for the ERS construct was 0.837, indicating robust internal consistency. The high Cronbach's alpha value suggested that the items measured the same construct and were highly correlated. The composite reliability for the ERS construct was 0.902, signifying high reliability. The high composite reliability

value implies that the items are highly reliable measures of the ERS construct. The Average Variance Extracted (AVE) for the ERS construct was 0.754, indicating that the common factor explained 75.4% of the variation in the ERS scores. AVE serves as a measure of convergent validity, reflecting the extent to which variance in the items is accounted for by the construct they measure. The high AVE value indicated a strong relationship between the items and the ERS construct, affirming that they measured the same underlying construct.

The VRNM construct comprises three items: VRNM1, VRNM2, and VRNM3, measuring victimization, with loadings on the common factor ranging from 0.819 to 0.866 (**Figure 1**). The Cronbach's alpha for the VRNM construct was 0.805, indicating good internal consistency. The composite reliability for the VRNM construct was 0.885, indicating high reliability. The AVE for the VRNM construct was 0.720, indicating that the common factor explained 72% of the variation in the VRNM scores (**Table 4**). All items had Variance Inflation Factor (VIF) values below the threshold of 5, suggesting multicollinearity was not a significant concern.

Table 3 Demographic information of the respondents (*N* = 247)

Question	Category	f	%
How long have you worked in this hospital?	Less than one year	3	1.2
	1 to 5 years	87	35.2
	6 to 10 years	84	34
	11 to 15 years	37	15
	16 to 20 years	24	9.7
	21 years or more	12	4.9
How long have you worked in your current hospital work area/unit?	Less than one year	7	2.8
	1 to 5 years	90	36.4
	6 to 10 years	93	37.7
	11 to 15 years	35	14.2
	16 to 20 years	18	7.3
	21 years or more	4	1.6
Typically, how many hours per week do you work in this hospital?	20 to 39 hours per week	22	8.9
	40 to 59 hours per week	222	89.9
	60 to 79 hours per week	3	1.2
What is your position in your hospital? Select one answer that best describes your position	Registered Nurse	219	88.7
	Charge Nurse	25	10.1
	Senior Charge Nurse	2	0.8
In your staff position, do you typically have direct interaction or contact with patients?	Yes	242	98
	No	5	2
How long have you worked in your current specialty or profession?	Less than one year	2	0.8
	1 to 5 years	39	15.8
	6 to 10 years	74	30
	11 to 15 years	77	31.2
	16 to 20 years	30	12.1
	21 years or more	25	10.1

Table 4 Outer model results

Items	Loadings	VIF	Cronbach's α	CR	AVE
ERS2	0.900	2.350	0.837	0.902	0.754
ERS3	0.865	2.018			
ERS4	0.840	1.768			
VRNM1	0.819	1.635	0.805	0.885	0.720
VRNM2	0.866	1.819			
VRNM3	0.860	1.807			

Note: CR = Composite Reliability

Inner Model Assessment Results

The mean for ERS was 4.093, indicating that, on average, participants scored slightly above the midpoint of the scale (ranging from 0 to 5). The standard deviation for ERS was 0.680, indicating some sample score variability. The mean for VRNM was 4.104, very close to the mean for ERS, suggesting similar average scores on both constructs. The standard deviation for VRNM was 0.688, similar to the standard deviation for ERS.

Following Fornell and Larcker's criteria for assessing discriminant validity, if the AVE values were sufficiently high, it would suggest distinctness between constructs, indicating they measure different underlying constructs. The correlation coefficient of 0.816 between ERS and VRNM was lower than the square root of the AVE for ERS and VRNM (**Table 5**). Thus, the validity of discriminant constructs was confirmed. Subsequently, VIFs were calculated using the mentioned ERS effects. As all Variance Inflation Factors (VIFs) and tolerance values were below the threshold of 5, collinearity among predictors in our model was not a significant problem.

Table 5 Variance explained

Item	ERS	VRNM
ERS (Mean= 4.093, SD= 0.680)	0.869	
VRNM (Mean= 4.104, SD= 0.688)	0.816	0.848

Effect Size = 1.999 | R^2 = 0.667

Additionally, the structural model was assessed between ERS and VRNM. The beta coefficient of 0.816 suggested a positive relationship between ERS and VRNM, indicating that as scores on the ERS construct increased, scores on the VRNM construct also tended to increase. The *t*-value of 22.447 was statistically significant (p <0.001), implying that the relationship between the two constructs was unlikely to be attributed to chance.

The sample mean of 0.815 indicated that there was a moderately strong average positive relationship between ERS and VRNM. The standard error of 0.036 suggested variability in the relationship between the two constructs, signifying that some individuals had a stronger relationship between ERS and VRNM than others.

The confidence intervals of 0.747 to 0.873 at the 5% level suggested 95% confidence that the true population beta coefficient fell within this range (**Table 6**). Since this range did not include 0, it further supported the conclusion of a positively significant relationship between ERS and VRNM. Thus, the hypothesis was accepted.

Table 6 Structural model results

Relationship	ERS → VRNM
Beta	0.816
Sample Mean (M)	0.815
SD Error	0.036
t-value	22.44
p-value	<0.001
5.00%	0.747
95.00%	0.873
Result	Accepted

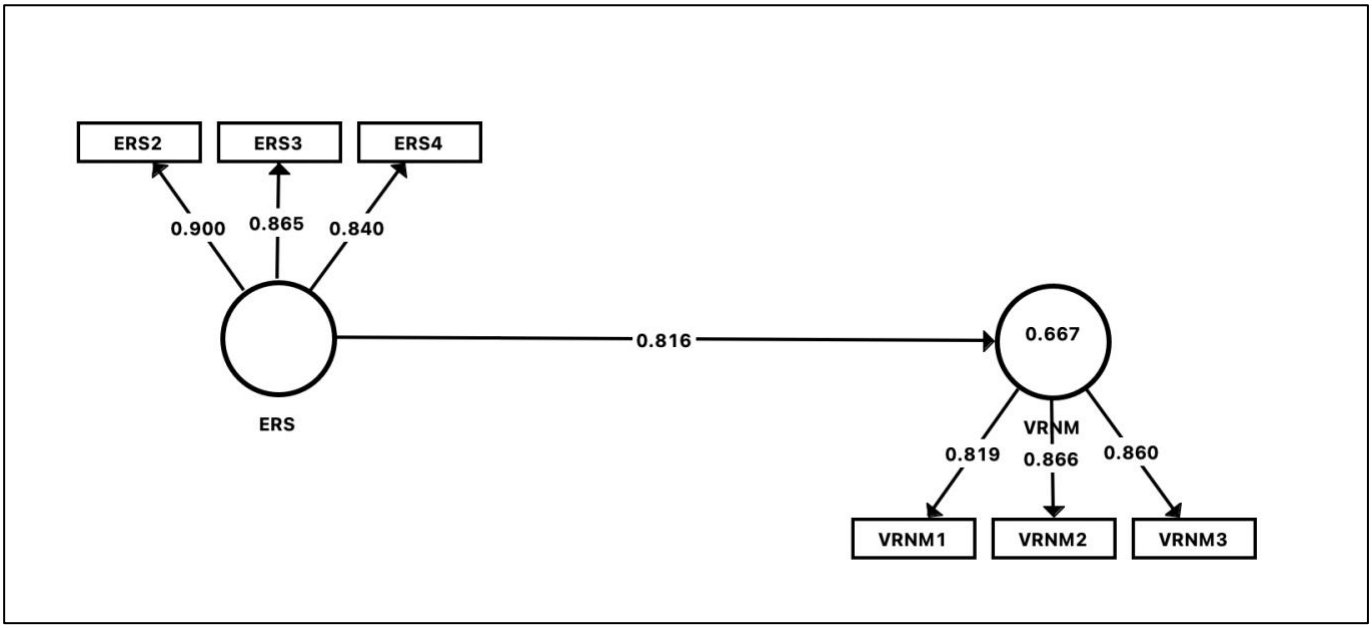

Figure 1 Model of the study

Discussion

The present study demonstrated the crucial role of nurses in reporting, as they consistently identify and report various occurrences, including near misses. The majority of respondents are frontline nurses with substantial hospital experience directly interacting with patients. Findings indicated that nurses showed the intention and willingness to report near misses. Due to its advantages, ERS is regarded as the preferred reporting mechanism in many aspects (Levtzion-Korach et al., 2009). One of the benefits of ERS is its rapid data gathering, processing, and analysis capabilities (Woo & Avery, 2021).

The tool used in this study yielded positive scores across its six items, averaging 94%. The highest score pertained to nurses' familiarity with the ERS ("I am familiar with the current electronic incidence reporting system in place"). Being comfortable and confident in utilizing the ERS smoothly and effectively represents the initial step in acknowledging the ERS as the preferred reporting method. Without proper system orientation, nurses may hesitate to use it.

Regarding the second statement ("I am actively using the current electronic incidence system to record near-miss incidents"), 95% of the participating nurses agreed or strongly agreed. This shows the nurses' commitment to using the ERS and confidence in the system. Additionally, 91% of the nurses appreciated the system's ease of use by responding with agree or strongly agree to statements such as "the current electronic reporting incidence system is not complicated" and "the current electronic reporting incidence system is user-friendly." Conversely, a previous study found that nurses who faced challenges in accepting technology attributed their difficulties to their institutions' failure to provide adequate support in organizing suitable training programs that would enhance their familiarity with computerized mistake-reporting systems (Lederman et al., 2013).

The finding indicated that nurses believe ERS is the optimal tool for reporting near misses. This belief is anticipated to enhance reporting practices and instill greater confidence in the ERS as a recognized reporting tool. Furthermore, the findings demonstrated the ERS's success in achieving high satisfaction levels. Most respondents found the system easy to use, ensuring patient confidentiality and facilitating anonymous reporting. Walsh et al. (2010) revealed that there are no added barriers to reporting incidents associated with the use of an electronic adverse incident reporting system compared to other system types.

Furthermore, the findings from our research suggest a relevance of 66.7% when applied to various hospital settings in the context of this particular study. It can be inferred from this that electronic reports have the potential to enhance information about incidents. Developing a user-friendly program, a robust user interface, and an improvement and correction system are all crucial aspects of the electronic

reporting system that hospitals need to address to enhance nurse reporting through electronic reports.

The primary limitation identified during the research process was the exclusive selection of nurses from Al Dhafra Hospitals as participants, which might constrain the generalizability of the findings to other regions. Future research could consider involving other healthcare professionals to provide additional perspectives, considering their impact on patient care and the potential for valid reporting beyond nurses. Another limitation highlighted by the majority of nurses was their direct patient contact or frontline care roles. Obtaining insights from nursing management regarding the study variables would enhance responses with an administrative viewpoint on the topic. Recommendations to address these limitations in future studies are necessary to ensure a more comprehensive understanding of the subject.

The study has various implications. Firstly, the ERS system has garnered widespread acceptance and support for reporting near misses in a blameless and non-punitive atmosphere. A more accurate and comprehensive understanding of healthcare risks will enhance services and care outcomes. The advantages of ERS make it a valuable instrument for reporting near misses. The effective utilization of ERS must be prioritized by healthcare executives, providing the necessary resources. Additionally, nurses should continually receive training and education to enhance their knowledge and proficiency with the system. Simplifying and streamlining the reporting process should be the next step. Access to electronic reporting systems for healthcare professionals should be quick and easy. These systems should be designed so straightforwardly that staff can operate them with minimal obstacles.

Conclusion

The study's findings offer crucial and insightful information about the meaningful and positive connections between electronic reports and voluntary reporting by nurses. The model presented illustrates the potential of electronic reports to enhance the reporting of incidents by nurses, particularly near misses involving patients. In light of these findings, specific electronic reports that contribute to this correlation, such as electronic assistance systems, are highlighted. The implications for nursing practice are substantial, and it is recommended that nursing administrators, healthcare authorities, and academic institutions prioritize the advancement of electronic incidence reporting.

Declaration of Conflicting Interest

The authors declared no conflict of interest in this study.

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Authors' Contributions

The study was conducted, analyzed, and interpreted by the authors independently. The authors' contributions were as follows: MA conducted the study's design and performed analysis. MA, NK drafted the manuscript. NK is the supervisor of MA. Both authors have reviewed and approved the final manuscript to be published.

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Data Availability

The datasets generated and analyzed in this article are available from the corresponding author.

Declaration of Use of AI in Scientific Writing

There is nothing to declare.

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