Nurses' Willingness to Report Near-Miss And Their Perception of Patients' Safety Culture

Salwa Ahmed Mohamed Ebrahim [1], Shaimaa Ali Mohamed Ismail [2]

[1]Assistant Professor of Nursing Administration,Faculty of Nursing, Beni Suef University, Egypt.
[2] Lecturer of Nursing Administration, Faculty of Nursing-Cairo University, Egypt.

Abstract

Background: Reporting of near-miss safety events is commonly assumed to enhance safety in organizations, as such reporting enables managers to identify and address accident risk factors. **Aim:** This study aimed to explore nurses' willingness to report near-miss and their perception of patients' safety culture. **Methodology:** A cross-sectional descriptive research design was used to conduct this research. A convenient sample of 300 nurses over a period of four months, were recruited from Beni suef university hospital and Beni-Suef Chest Hospital. Three tools were used as follow; a sociodemographic form; nurses' willingness to report near-misses scale and nurses' perception of patient safety culture. **Results:** There was a significant positive linear correlation between nurses' willingness to report near-misses and their perception of patient safety culture at r. 0.568, and p. value <0.01. Also, the ANOVA analysis explained that critical department, experience, and attended training courses had a high-frequency positive effect on nurses' willingness to report near-misses. **Conclusion:** Nurses generally showed a moderate willingness to report near-misses and a moderate perception of patient safety culture. **Recommendation:** Integrate near-miss reporting and patient safety education into staff training to increase nurses' awareness of the value of near-misses reporting which will significantly improve patient safety.

Keywords: Nurses; report near-miss and patients' safety culture.

Introduction

Patient safety is becoming increasingly important in healthcare settings around the world. Furthermore, patient safety is an essential component of high-quality healthcare **(Alquwez et al., 2018 and Alenezi et al., 2019)**. Patient safety is described as the prevention, mitigation, and avoidance of negative outcomes or injuries as a result of healthcare processes (**Jang et al., 2017 and Tereanu et al., 2020)**. Patient safety incidents are defined as circumstances that may or may not result in harm and, when it occurs, are characterized as an adverse event. Patient safety is related to reducing the risk of unnecessary healthcare-related harm to an acceptable minimum **(Sanchis et al., 2020)**.

An unsafe health environment is a public health issue because it exposes patients and workers to harmful events **(AlOlayan et al., 2021)**. Inefficiencies and poor communication inside and between specific units of healthcare delivery systems also contribute to safety concerns. To ensure patient safety, a focus is placed on a care delivery system

that prevents errors, learns from mistakes, and develops on a commitment to practices that keep patients safe. This is accomplished by collaboration among stakeholders such as organizations, health-care professionals, clients, and patients **(Nnebue et al., 2021)**.

Adverse events in hospitalized patients are catastrophic and costly to individuals, hospitals, and society. An established and recommended technique for identifying near-misses is provider reporting of adverse events at the point of care **(Hessels et al., 2019 and Burlison et al., 2020).** A near-miss is an unanticipated incident happening, that does not result in an injury/illness or damage but had the potential to do so **(Brown, 2021)**. Reporting near-misses is a practical attitude to improve the confusing challenge of patient safety. Evidence suggests that patient safety culture and the characteristics of errors might have important impacts on reporting **(Yang & Liu, 2021)**.

Management of near-misses is a crucial part of safety. Near-misses can be reported, analyzed, and learned from in order to prevent future incidents and so improve safety **(Hasanspahić et al., 2020)**. It is often considered that reporting near-miss safety events improves organizational safety because it allows managers to identify and solve accident risk factors. Employees, who must accurately record near-miss events, and managers, who must promote such reporting, must work together for a business to be able to utilize near-miss events in this way **(Winkler et al., 2019)**. If near-misses are reported and managed properly, they can help to enhance safety procedures; however, if they are handled incorrectly, the risk of additional adverse incidents may increase **(Westreich et al., 2021)**.

Despite efforts to build reporting systems across the board in healthcare, errors are still underreported globally. Because near-misses are less observable and cause no harm to patients, reporting them is significantly more difficult. Uncertainty about what to report and how to disclose it, a lack of feedback, and fear-related issues are all factors that affect reporting healthcare errors **(Archer et al., 2017; Chiang et al., 2019 and Yang & Liu, 2021)**. Part of an organization's safety culture is having an accurate and effective reporting system. Individual and group ideas, values, attitudes, perceptions, competences, and patterns of behavior that influence the organization's commitment to quality and safety make up patient safety culture **(Yang & Liu, 2021)**.

The attitudes, beliefs, perceptions, and values shared by employees about patient safety make up the patient safety culture, which is an element of the organizational culture **(Özcan et al., 2020)**. In the clinical setting, perceptions of patient safety culture have recently changed. Patient safety is based on the idea of lowering risks and totally avoiding those that can be avoided when receiving healthcare **(WHO, 2019 and El-Sherbiny et al., 2020)**. Safety culture is a set of individual or group beliefs, attitudes, perceptions, competencies, and behaviors that are considered a component of organizational culture. They will determine an organization's approach to patient safety management and commitment **(Sanchis et al., 2020)**.

In hospitals, a strong patient safety culture may be linked to better patient

outcomes **(Hessels et al., 2019)**. Measuring patient safety culture is a crucial step in helping healthcare institutions plan activities to improve the quality of care provided to patients by identifying and eliminating potential errors **(Aouicha et al., 2021)**. Therefore, this study aimed to explore nurses' willingness to report near-miss and their perception of patients' safety culture.

Significance of the study:

Patient safety remains a primary health care concern due to the high rate of errors. Beyond the negative aspect of patient harm, errors can serve as valuable resources for learning and improving safety. Among optimal approaches to learn from errors, developing incident reporting systems has been recognized as a globally effective and efficient strategy **(Fischer et al., 2018).** So, reporting errors is the mark of a highly reliable learning organization and should be strengthened to improve safety **(Chiang et al., 2019)**.

Also, despite efforts to build reporting systems across the board in healthcare, errors are still underreported globally. Because near-misses are less observable and cause no harm to patients, reporting them is significantly more difficult. Uncertainty about what to report and how to disclose it, a lack of feedback, and fear-related issues are all factors that affect reporting healthcare errors **(Archer et al., 2017; Chiang et al., 2019 and Yang & Liu, 2021)**. Part of an organization's safety culture is having an accurate and effective reporting system. Individual and group ideas, values, attitudes, perceptions, competences, and patterns of behavior that influence the organization's commitment to quality and safety make up patient safety culture **(Yang & Liu, 2021)**.

Moreover, reporting near-misses could increase awareness and performance of nurses regarding the patient safety and lessening the risk of safety issues (**Winkler et al., 2019**). Furthermore, a reliable and effective reporting system is part of an organization's safety culture. Furthermore, the patient safety culture is universal as foundational to improve safety attitudes and performance. Nurses had more agreement on reporting errors positively if their work conditions featured a patient safety culture and a system driven approach to handle errors **(Tereanu et al.,2020).**

In addition, in hospitals, a strong patient safety culture may be linked to better patient outcomes **(Hessels et al., 2019)**. Measuring patient safety culture is a crucial step in helping healthcare institutions plan activities to improve the quality of care provided to patients by identifying and eliminating potential errors **(Aouicha et al., 2021)**. Therefore, this study aimed to explore nurses' willingness to report near miss and their perception of patients' safety culture.

Therefore, considering the importance of near-misses and its relationship with patient safety culture, this study aims to explore nurses' willingness to report near-miss and their perception of patients' safety culture.

Subjects and Methods:

The present study was done to explore nurses' willingness to report

near-miss and their perception of patients' safety culture.

To fulfill the aim of this study the following research questions are formulated**:**

Q1: what is level of Nurses' Willingness to report near-misses?

Q2: What is level of nurses' perception of patients' safety culture?

Q3: Is there correlation between nurses' willingness to report near-misses and their perception for patients' safety culture?

Research design:

A cross-sectional descriptive research design was employed to accomplish this study.

Setting:

The study was carried out at Beni suef university hospital The study was carried out at Beni suef university hospital and Beni-Suef Chest Hospital (internal medicine, surgical, and critical units). This study was conducted at Beni-suef University Hospital. Beni-suef University Hospital consists of seven main departments and units providing multi services. The hospital consists of six-floor building. The first floor includes the emergency department and hemodialysis unit beside kitchen, laundry and sterilization unit. The second floor hosts the oncology unit, orthopedic unit, radiology and laboratory department beside outpatient clinics. Third floor consists of general intensive care unit, cardiothoracic intensive care unit and operation department subdivided into general and specific operation units. Fourth floor hosts surgical departments and physician resting suit. Fifth floor consists of medical departments, cardiac department and pediatric department. Sixth floor includes obstetric department, E.N.T unit and endemic unit. Hospital's bed-capacity is 432. And Beni-Suef Chest Hospital (internal medicine, surgical, and critical units).

Sample:

A convenient sample of 300 nurses who were recruited from Beni suef university hospital and Beni-Suef Chest Hospital and agreed to participate over a period of four months, from 1st July to 30th October, 2021.

Tools for data collection:

Study data were collected using three tools as the following:

1. The first tool named **A sociodemographic form**; developed by the researchers, presented the sociodemographic profile of the studied nurses, it recorded nurses' age, gender, marital status education, years of work experience, work department, training courses about patient safety, and training courses related near miss report.

2. The second tool named **Nurses' willingness to report near-misses scale**; this was developed by **Jeon (2014)**, adapted from **Kwon et al. (2017),** and translated to Arabic language to measures Nurses' willingness to report near misses. It consisted of a total of 11 questions; includes of 1 question on overall willingness and 10 questions on willingness to report near-misses in specific situations. Each question was rated on a three-point Likert scale ranging

from 1 (Not at all), 2 (sometimes), 3 (very much). Summed up; higher scores indicate a higher willingness to report near-misses. The total willingness to report near-misses score was categorized as the following high (>70.0%), moderate (50 - 70.0%), and low (<50).

3. The third tool named **Nurses' Perception of patient safety culture**; this was developed by the Agency for Healthcare Research and Quality (AHRQ) by **Sorra & Nieva, (2004)**. This questionnaire is an open tool that does not require approval from AHRQ for use. The Arabic version was adopted from **Najjar et al., (2013)**. The Hospital Patient Safety scale includes a total of 43 questions were divided into six areas, as follow; 17 questions on perceptions of patient safety culture inside the department and 4 questions on direct supervisors or managers' attitudes toward patient safety. 6 questions on the perception of the hospital's reporting structure for medical occurrences, 3 questions on the frequency of incident reporting, 11 questions on the perception of the hospital's patient safety culture, and 2 questions on overall workplace safety. Each question was scored on a 5-point Likert scale was rated on a five-step Likert scale ranging from 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), and 5 (strongly agree). Higher average scores indicating a better safety culture. The total patient safety culture perception score was categorized as the following high (>70.0%), moderate (50- 70.0%), and low (<50).

Validity and Reliability:

Validity:

The adapted Arabic translated virion of Nurses' willingness to report near-misses scale was tested by a panel of three experts from the Faculty of Nursing - Beni-suef University. Each expert on the panel was asked to examine the questionnaire for content, coverage, clarity, wording, length, format, and overall appearance. Furthermore, tools were field-tested on a pilot sample of 30 nurses (10% of the target sample) by using Cronbach's alpha coefficient test in SPSS program version 24 by a statistician.

Reliability:

Reliability was tested using Cronbach's Alpha Coefficient for the three questionnaires The results were as the following: Internal consistency reliability (Cronbach's α) for nurses' willingness to report near-misses scale emerged as good (0.801), and internal consistency reliability (Cronbach's α) for nurses' perception of patient safety culture emerged as good (0.876).

Pilot study:

The validated questionnaire was subsequently pre-tested on 30 nurses (10%). Pilot study was carried out prior to data collection to ensure the clarity and applicability of the items, and to estimate the time needed to complete the questionnaire. The result showed that the time spent in filling the three tools was ranged between 30 to 35 minutes. Based on the pilot study analysis no modifications were done in the three tools; so, this pilot sample was included in the total sample.

Ethical Considerations:

The study received ethics approval from the research ethics committee of the Faculty of Nursing, Beni-Suef University. Data were collected via questionnaires that were distributed by the researchers in staff meetings and submitted in closed envelopes. Completion of the questionnaires constituted an agreement to participate in the study. The questionnaires were filled in anonymously and the data were kept confidential and used for research purposes only.

Procedure:

Upon receiving the official approval from the ethical committee at the Faculty of Nursing - Beni-Suef University ; the researchers got a permission from the Beni suef university hospital and Beni-Suef Chest hospital administrators; the researchers explained the aim, nature, and significance of the study for every head nurse of internal medicine, surgical, and critical units in each hospital to achieve their collaboration during the implementation phase of the study among nurses at their work units. Oral and written acceptance of each eligible nurse to participate in the research was taken. The researchers collected the three questionnaires individually from nurses via a one-on-one interview. Time spent to fill the three questionnaires ranged between 30 to 35 minutes. Data were collected over a period of 4 months from 1st July to 30th October, 2021.

Statistical Analysis

Data was sorted, classified, and the results were shown in tables. The Statistical Package for the Social Sciences was used to analyze the data on a suitable personal computer (SPSS Inc; version 24; IBM Corp, Armonk, NY, USA). Research questions were tested using descriptive statistics (means, standard deviations and frequencies). Differences between variables were examined using ANOVA tests. In addition, correlations between the study variables were examined Pearson's correlation coefficient (r). The results were considered significant when the probability of error is less than 5% ($p < 0.05$) and highly significant when the probability of error is less than 0.1% ($p < 0.001$).

Results:

Table (1): shows that, the study included 300 nurses; their mean age was (33.08±4.30) years. Of all participants (78.3%) were females, (73.3%) were married. Furthermore, (36.7%) of them had a bachelor's degree in nursing, (42.7%) of participants had <5 years of experience. Regarding the study participants` working department, (36.7%) working in the critical unit, (38.3%) in the internal medicine unit, and (5%) working in the surgical unit. More than half (55%) did not attend training programs about patient safety and 91.7% did not attend training programs about near mises reporting.

Table (2): illustrates that, regarding nurses' willingness to report near-misses; (38%) of participants did not at all had the overall willingness to report near-misses. As regard, the willingness to report near-misses in the specific situations revealed that (36%), (41.3%), (43%), (40.3%), (33.3%), (37.3%), (43.35%), (46.7%), (45.3%), (45%) never

report near-misses regarding drug administration, fall, treatment, suicide, surgery, lab investigation, blood transfusion, restraints, infection, and pressure sores, respectively.

Figure (1): shows that, (40 %) of the studied nurses had moderate willingness to report near misses, (33 %) had a high level of willingness, and (27 %) had a low level of willingness.

Table (3): clarifies that, (36.7 %), (37.7 %), (40 %), (39.7 %), (39.3 %), (40.7 %) of nurses had moderate perception of patient safety culture within the department, supervisors or managers attitude related to patient safety, reporting structure for medical incidents at the hospital, frequency of incident reporting, perception of patient safety culture at the hospital, and safety at the workplace, respectively.

Figure (2): illustrates that, (41.7 %) of them had a moderately perception level of patient's safety culture, (30 %) had a high level, and (28.3%) had low level of perception regarding patient's safety culture.

Table (4): clarifies that, there was a highly statistically significant positive linear correlation between nurses' willingness to report near-misses and their perception of patient safety culture at (r. 0.568, p-value <0.01).

Table (5): shows that, regarding a multiple linear regression analysis highlighted, there is a statistically significant model detected through (F =13.808, p-value <0.01), explains (52%) of the variation in the perception of patient safety culture detected through (R2=0.52). Also, explained that age, experience, and attending training courses had a high-frequency positive effect on nurses' perception of patient safety culture at (p-value <0.01). While, high education level and the critical department had slight positive effect on Perception of patient safety culture with (p-value <0.05)

Table (6): illustrates that, a highly significant model detected through (F=15.409, p-value <0.01), explains (54%) of the nurses' willingness to report near-misses detected through (R2 value=0.54). Also, explained that, critical department, experience, and attended training courses had a high-frequency positive effect on nurses' willingness to report near misses at (p-value <0.01). While age and high education level had a slight positive effect on willingness to report near misses with (p-value <0.05).

Table (1): Percentages Distribution of studied nurses according to their characteristics (n=300).

Items	Sample No.	Sample %
Age		
▪ 20 - <30	115	38.3
▪ 30 - <40	100	33.3
▪ 40 or more	85	28.4
Mean ±SD	33.08±4.30	
Gender		
▪ Male	65	21.7
▪ Female	235	78.3
Marital status		
▪ Married	220	73.3
▪ Not married	80	26.7
Educational level		
▪ Diploma	54	18
▪ Technical health institute	135	45
▪ Bachelor of nursing	101	36.7
▪ Postgraduate	10	3.3
Experience years		
▪ < 5years	128	42.7
▪ 5 - < 10 years	77	25.7
▪ >10 years	95	31.7
Mean ±SD		
Department		
▪ Internal medicine	115	38.3
▪ Surgical	75	25
▪ Critical unit	110	36.7
Training courses related patient safety		
▪ Yes	135	45
▪ No	165	55
Training courses related near miss report		
▪ Yes	25	8.3
▪ No	275	91.7

Table (2): Percentages distribution of studied nurses according to their answers about the questions of willingness to report near-miss scale (n=300).

Items	Very much (3)		Sometimes (2)		Not at all (1)	
	N	%	N	%	N	%
Overall willingness to report	86	28.7	100	33.3	114	38
Drug administration	72	24	120	40	108	36
Falls	66	22	110	36.7	124	41.3
Treatment	71	23.7	100	33.3	129	43
Suicide	69	23	110	36.7	121	40.3
Surgeries	73	24.3	127	42.4	100	33.3
Lab investigation	78	26	110	36.7	112	37.3
Blood transfusion	80	26.7	90	30	130	43.3
Restraints	63	21	97	32.3	140	46.7
Infection	74	24.7	90	30	136	45.3
Pressure sores	80	26.7	85	28.3	135	45

Figure (1): Percentages distribution of studied nurses according to their level of willingness to report near-misses (n=300).

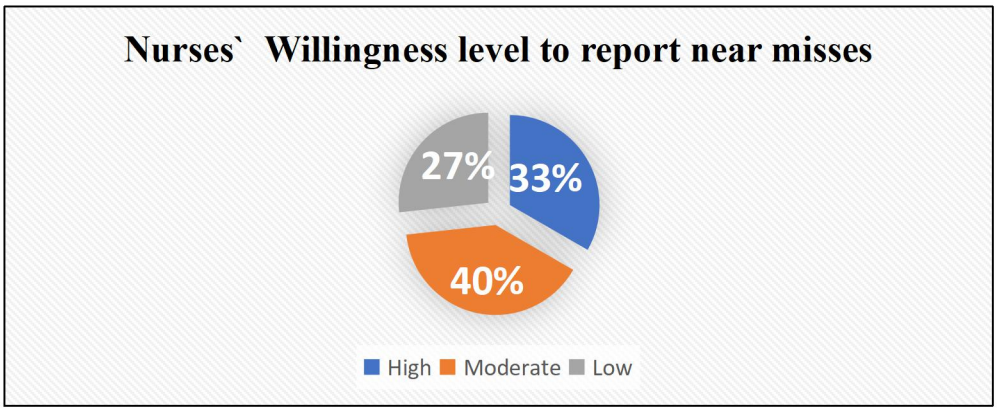

Table (3): Percentages distribution of studied nurses according to the areas of their perception of patient safety culture (n=300).

Items	High		Moderate		Low	
	N	%	N	%	N	%
Perceptions of patient safety culture within the department	85	28.3	110	36.7	105	35
Attitude of direct supervisors or managers related to patient safety	79	26.3	113	37.7	108	36
Reporting structure for medical incidents at the hospital	80	26.7	120	40	100	33.3
Frequency of incident reporting	86	28.7	119	39.7	95	31.7
Perception of patient safety culture at the hospital	79	26.3	118	39.3	103	34.3
Overall safety at the workplace	68	22.7	122	40.7	110	36.6

Figure (2): Percentage distribution of studied nurses according to their level of perception for patients' safety culture (n=300).

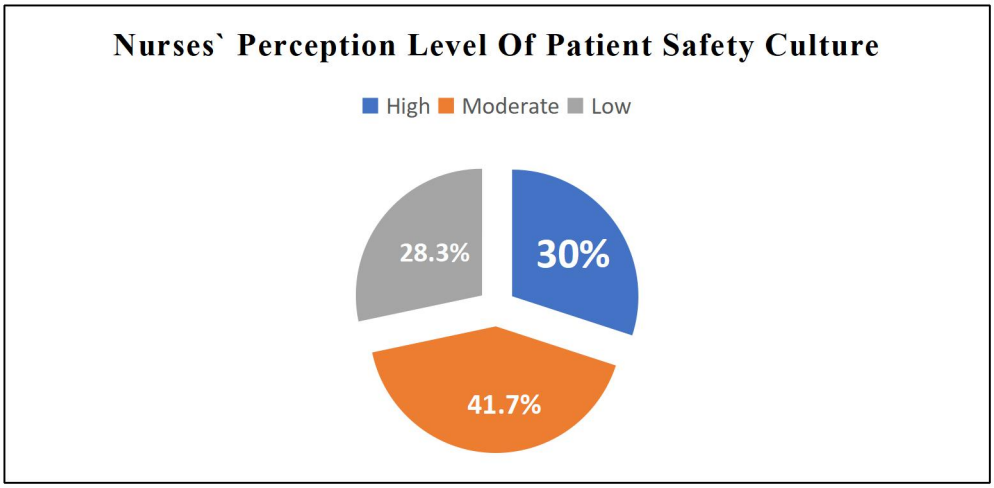

Table (4): Correlation between the nurses` willingness to report near-misses and their perception of patient safety culture (n=300).

	Nurses` perception of patient safety culture
Nurses` willingness to report near-misses	r. 0.568 p. value <0.01**

Table (5): Multiple Linear regression model for studied nurses` characteristics and their perception of patient safety culture.

	Unstandardized Coefficients B	Standardized Coefficients Beta	T	P. value
Age	0.354	0.287	8.011	<0.01**
Education level "high"	0.299	0.201	4.123	<0.05*
Department. "critical"	0.190	0.135	2.809	<0.05*
Experience	0.344	0.256	6.770	<0.001**
Training courses "Yes"	0.411	0.367	9.076	<0.01**
	ANOVA			
Model	R^2	F	P. value	
Regression	0.52	13.808	<0.01**	

a. Dependent Variable: Perception of patient safety culture
b. Predictors: Age, Education level, Department, Experience and Training courses

Table (6): Multiple Linear regression model for studied nurses` characteristics and their willingness to report near-misses.

	Unstandardized Coefficients B	Standardized Coefficients Beta	T	P. value
Age	0.211	0.134	3.242	<0.05*
Education level	0.199	0.103	2.998	<0.05*
Department	0.305	0.211	7.644	<0.01**
Experience	0.410	0.346	8.066	<0.01**
Training courses	0.398	0.302	7.667	<0.01**
	ANOVA			
Model	R^2	F	P. value	
Regression	0.54	15.409	<0.01**	

a. Dependent Variable: Willingness to report near misses
b. Predictors: Age, Education level, Department, Experience and Training courses

Discussion:

Adverse event reporting is one strategy to identify risks and improve patient safety, but, historically, adverse events are underreported by registered nurses (RNs) because of fear of retribution and blame **(McFarland & Doucette, 2018)**. This study was conducted to explore nurses' perceptions of patient safety culture, their willingness rate of reporting near misses, and the relationship between patient safety culture perception and nurses' willingness to report near misses.

In this study the principal findings were that more than one-third of the nurses reported a moderate positive score of patient safety culture and moderate positive score of willingness to report near misses. A positive linear correlation

was found between perception of safety culture and the willingness to report near misses. Working in critical department, experience and attended training courses had high frequency positive effect on nurses' willingness to report near misses. While age and high education level had slight positive effect on willingness to report near misses. Furthermore, age, experience, and attending training courses had high frequency positive effect on nurses' perception of patient safety culture. While high education level and working in critical department had slight positive effect on their perception of patient safety culture.

On a similar descriptive cross-sectional study that investigating the effects willingness to report near miss on the perceptions of patient safety culture of nurses at general hospitals, carried by **Kwon et al. (2017)** in South Korea, it was revealed blood transfusion to be the highest reported, followed by surgeries, suicides, infection, restraints, tests, falls, treatments, pressure sores and drug administration. Moreover, concerning the perceptions of patient safety culture, it was founded that the highest to lowest scores were found in supervisor/ manager within the department, followed by communication within the division building, safety of the patients in the division building, division building's tendency to report safety incidents, work environment of the division building, and hospital environment. Like our study findings **Kwon's et al., (2017)** study analysis showed that there was a significant positive correlation between perception of patient safety culture and willingness to report near misses ($r = .22$, $p = .002$).

Supporting our study results, **Yang & Liu, (2021)** in a cross-sectional descriptive study, entitled "The effect of patient safety culture on nurses' near-miss reporting intention: the moderating role of perceived severity of near misses", it was showing a moderate level of willingness to report near misses among nurses. Moreover, Findings of **Kim et al., (2018)** showed that reports of near misses are relatively low and need to be strengthened. On the other hand, **Rutledge et al., (2018)**, on studying "Barriers to medication error reporting among hospital nurses" reported that healthcare workers generally hold a passive attitude towards error reporting. Also, the intention among nurses to report medical incidents was high according to **Chen et al. (2018)**. This difference might depend on the type of event, work environment, work rules, and regulation.

Moreover, **Toren et al., (2021)** in a study entitled "Hospital nurses' intention to report near misses, patient safety culture and professional seniority", among a total of 227 nurses, demonstrated that most nurses rated the patient safety culture components as moderately positive. Approximately 80% stated their intention to report a near miss, which contradictory to our findings. Also, **Toren et al., (2021)** reported a positive linear correlation between all components of the patient safety culture and the willingness to report a near miss event. As regard the multiple regression analysis of this study, three variables predicted nurses' intention to report near misses which are: teamwork, feedback and communication about errors, and the number of near misses reported in the last year.

Furtherly, our study findings go in the same line with a cross-sectional survey applied to 1,380 frontline nurses recruited from six teaching hospitals in Taiwan, carried by **Chiang et al., (2019)**, and concluded that more than half of the nurses did not display a voluntary attitude towards reporting. Additionally, voluntary incident reporting was correlated with factors of reporting culture, nursing safety practices and perceptions of work.

Parrel to **Chegini's et al., (2020)** cross sectional survey entitled "The impact of patient safety culture and the leader coaching behavior of nurses on the intention to report errors", more than one third of nurses had an intention to report errors. Regarding patient safety culture, areas of strength and weakness were "teamwork within units" and "non-punitive response errors". Regression analysis findings highlighted a significant association between an intention to report errors and patient safety culture, and nurses' educational status. Also, support with the study conducted by **Singal et al., (2018)** titled in Patient safety culture and associated factors: A quantitative and qualitative study of healthcare workers' view in Jimma zone Hospitals, Southwest Ethiopia and stated that reporting adverse event ($\beta = 3.34$, 95 % CI: 2.12, 4.57) was factor significantly associated with the patient safety culture.

Conclusion:

Reporting near misses is a critical but challenging aspect of patient safety. This study aimed to explore nurses' willingness to report near-miss and their perception of patients' safety culture. This study concluded a significant positive linear correlation between nurses' willingness to report near misses and their perception of patient safety culture at ($r = 0.568$, p-value <0.01). Also, explained that critical department, experience, and attended training courses had a high-frequency positive effect on nurses' willingness to report near misses. A specific near-miss management and reporting education program is a key component to improve near misses reporting willingness among nurses which will significantly improve patient safety.

Recommendation

Based on the study results the following recommendations are suggested:

1. Policy should support the reinforcement of near miss reporting to enable nurses to record near misses and therefore improve patient safety.
2. Encourage and/or motivate nurses to immediately report near misses and associated hazards.
3. Make a digital near miss reporting tool clearly accessible to nurses.
4. Teach nurses to report near misses to their management (verbally or in writing).
5. Integrate near-miss education into staff training to increase nurses' awareness of the value of near misses reporting.

Acknowledgement:

Great thanks to all nurses who participated in this study.

Declaration of Conflicting of Interests:

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

Funding:

The authors received no financial support for the research, authorship, and/or publication of this article.

References:

Alenezi, A., Pandaan, R., Almazan, J., Pandaan, I., Casison, F., & Cruz, J. (2019). Clinical practitioners' perception of the dimensions of patient safety culture in a government hospital: A one-sample correlational survey. Journal of clinical nursing, 28(23-24), pp 4496-4503.

AlOlayan, R., Alahmad, A., Buali, D., Alonaizan, F., Alhareky, M., Alhumaid, J., & Nazir, M. (2021). Patient safety culture amongst dental students and interns in Dammam, Saudi Arabia. European Journal of Dental Education, 25(1), pp 175-182.

Alquwez, N., Cruz, J., Alshammari, F., Felemban, E., Almazan, J., Tumala, R., Tork, H. (2019). A multi-university assessment of patient safety competence during clinical training among baccalaureate nursing students: A cross-sectional study. Journal of Clinical Nursing, 28(9–10), pp 1771–1781. https://doi.org/10.1111/jocn.14790

Aouicha, W., Tlili, M., Sahli, J., Dhiab, M., Chelbi, S., Mtiraoui, A., & Mallouli, M. (2021). Exploring patient safety culture in emergency departments: a Tunisian perspective. International Emergency Nursing, 54(5), pp100941.

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), pp 17155.

Brown, K. (2021). What is the Difference Between a "Near Miss" and an "Incident"?. Retrieved 22 September 2021, from https://www.rrp.com.au/blog-mick-fanning-hazard-or-near-miss/.

Burlison, J., Quillivan, R., Kath, L., Zhou, Y., Courtney, S., Cheng, C., & Hoffman, J. (2020). A multilevel analysis of US hospital patient safety culture relationships with perceptions of voluntary event reporting. Journal of patient safety, 16(3), pp 187-193.

Chegini, Z., Kakemam, E., Jafarabadi, M., & Janati, A. (2020). The impact of patient safety culture and the leader coaching behaviour of nurses on the intention to report errors: a cross-sectional survey. BMC nursing, 19(1), pp 1-9.

Chen, L., Wang, L., Redley, B., Hsieh, Y., Chu, T., & Han, C. (2018). A Study on the reporting intention of medical incidents: A nursing perspective. Clinical nursing research, 27(5), pp 560-578.

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

El-Sherbiny, N., Ibrahim, E., & Abdel-Wahed, W. (2020). Assessment of patient safety culture among paramedical personnel at general and district hospitals, Fayoum Governorate, Egypt. Journal of the Egyptian Public Health Association, 95(1), 1-8.

Fischer, S., Jones, J., & Verran, J. (2018). Consensus achievement of leadership,
organizational and individual factors that influence safety climate: Implications
for nursing management. Journal of Nursing Management 26(1), pp 50–58.

Hasanspahić, N., Frančić, V., Vujičić, S., & Maglić, L. (2020). Reporting as a key element of an effective near-miss management system in shipping. Safety, 6(4), pp 53.

Hessels, A., Paliwal, M., Weaver, S., Siddiqui, D., & Wurmser, T. (2019). Impact of patient safety culture on missed nursing care and adverse patient events. Journal of nursing care quality, 34(4),pp 287.

Jang, H., Song, Y., & Kang, H. (2017). Nurses' perception of patient safety culture and safety control in patient safety management activities. Journal of Korean Academy of Nursing Administration, 23(4), pp 450-459.

Jeon, S. (2014). "Relationship between the nurses' willingness to report near miss and the perceptions of patient safety culture." Unpublished master's thesis, Hallym University, Chuncheon.

Kim, S., Kim, E., Lee, J., & Oh, E. (2018). Effect of nurses' perception of patient safety culture on reporting of patient safety events. Journal of Korean Academy of Nursing Administration, 24(4), 319-327.

Kwon, H., Kim, H., & Park, K. (2017). Effects of the Ethical Values and Willingness to Report Near Miss on the Perceptions of Patient Safety Culture of Nurses at General Hospitals. International Journal of Applied Engineering Research, 12(22), pp 11951-11959.

McFarland, D., & Doucette, J. (2018). Impact of high-reliability education on adverse event reporting by registered nurses. Journal of nursing care quality, 33(3), pp 285-290.

Najjar, S., Hamdan, M., Baillien, E., Vleugels, A., Euwema, M., Sermeus, W., & Vanhaecht, K. (2013). The Arabic version of the hospital survey on patient safety culture: a psychometric evaluation in a Palestinian sample. BMC health services research, 13(1), pp 1-8.

Nnebue, C. , Ezeuko, A. , Chukwujekwu, N. , Onah, S. K., Obi-Okaro, A. , & Chukwu-Osodiuru, E. (2021). Determinants of patients' safety culture practices in a tertiary hospital in Nigeria. Journal of Patient Safety and Risk Management, 26(3), pp 116-125.

Özcan, T., Kaya, S., & Teleş, M. (2020). Evaluating patient safety culture at a private hospital. International Journal of Healthcare Management, pp 1-10.

Rutledge, D., Retrosi, T., & Ostrowski, G. (2018). Barriers to medication error reporting among hospital nurses. Journal of clinical nursing, 27(9-10), pp 1941-1949.

Sanchis, D., Haddad, M., Girotto, E., & Silva, A. (2020). Patient safety culture: perception of nursing professionals in high complexity institutions. Revista Brasileira de Enfermagem, pp 73.

Singal, M., Zafar, A., & Tbakhi, B. (2018). Assessment of knowledge and attitude towards safety events reporting among residents in a community health system Journal of Community Hospital Internal Medicine Perspectives, 8(5), pp 253–259.

Sorra, J., & Nieva, V. (2004). Hospital survey on patient safety culture. Agency for Healthcare Research and Quality.

Tereanu, C., Noll, A., Herghea, D., Malancea, R. I., Tinca, A., Eclemea, I., & Heddings, A. (2020). Trends in the Staff's Perception of Patient Safety Culture in Romanian Hospitals. Current Health Sciences Journal, 46(3), pp 236.

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.

Westreich, S., Perlman, Y., & Winkler, M. (2021). Analysis and Implications of the Management of Near-Miss Events: A Game Theoretic Approach. Reliability Engineering & System Safety, 21(2), pp 107645.

Winkler, M., Perlman, Y., & Westreich, S. (2019). Reporting near-miss safety events: Impacts and decision-making analysis. Safety science, 11(7), pp 365-374.

World Health Organization. (2019). Patient Safety, 4th global ministerial summit. https://www.who.int/patientsafety/en/.

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), pp 6-16.