

Perception of Patient Safety Incident Reporting System among Healthcare Workers in Hospital

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Abstract

Background: Incident reporting should ideally communicate all information relevant to patient safety. Local incident reporting systems in hospitals typically use an incident form that comprises basic clinical details and a brief description of the incident; there may be a list of designated incidents that should always be reported. **The aim of this study** was to determine the system perception for reporting patient safety incidents among healthcare workers, evaluating the factors affecting it, and working to improve it in hospitals. **Methods:** A cross-sectional study design was conducted, in which data and information were collected from 103 participating healthcare providers (28 physicians and 75 nurses) from **four hospitals in Makkah, KSA**. Descriptive statistics were used, and data were examined and entered in SPSS, version 28. **Results:** The study revealed that the opinion regarding reporting cases is equal for healthcare providers, as there was no significant correlation between the demographic characteristics of healthcare workers and their perception and attitude toward reporting, where there was also no significant correlation between the healthcare providers' perceptions and their attitudes and their participation or non-participation in the reporting system for PS incidents. **Conclusion:** Incident reporting is one of the most important evaluation tools of quality in any health institution, and it has been proven to play a major role in focusing on the essential areas of correcting, as well as enhancing the services provided in hospitals, which will be reflected on more patient satisfaction and improving the quality of health care and PS.

Keywords: Patient Safety, Incident Reporting System, and Healthcare Workers.

Introduction

One of the most crucial parts of healthcare is the concern for patient safety (PS), which is a key objective that healthcare facilities work hard to attain and improve. Additionally, there are a significant number of actual, harmful PS events in the healthcare industry. Thus, PS is the cornerstone and foundation for the advancement and quality of medical care^(1, 2). Moreover, real, unwanted, or unexpected events that occur to patients during healthcare are known as Patient Safety Events (PSEs)¹, these events that patients may experience include near misses, harmless events, and adverse events that may lead to their injury or death. On the other hand, healthcare institutions must make efforts and take all necessary measures to

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achieve PS and to strengthen and develop the various systems related to healthcare, through healthcare providers (HCPs) in all departments, especially the emergency department (EDs) ⁽²⁾.

Besides, incidents occur in healthcare institutions as they do in other sectors, but accidents here have a direct impact on PS. Therefore, healthcare institutions seek to enhance the documentation of PS incidents with the aim of improving and developing through researching and treating the root causes ⁽³⁾. Furthermore, there is an urgent need to seek and make efforts to improve and develop the level of healthcare systems, as well as direct the healthcare workforce towards enhancing their positive attitudes towards culture and knowledge of the concept of PS ⁽²⁾. It is also possible to improve the health care system and increase concern for PS through each health organization explaining and demonstrating the values and everything that is important within the health system, which includes the behavior and attitudes of health staff, a way of performing their work, rewards, and so forth ⁽⁴⁾.

The healthcare system is based on PS, and therefore PS requires from healthcare process to avoid harm and risks, protect patients from them, and work to reduce healthcare-related risks that affect patients and are considered unimportant to an acceptable extent ⁽⁵⁾. The World Health Organization (WHO) reports that forty-three million PS incidents happen each year. Moreover, there is a weakness in the provision of services and care by healthcare facilities to the patient if he feels fear when receiving treatment ⁽⁵⁾. Therefore, to ensure PS, the incident documentation system should be organized and set up within clear procedures for all healthcare providers, and enhance the documentation process by creating a blame-free environment ⁽⁶⁾.

Reporting of PS incidents has been defined as a mechanism that helps health professionals and enables them to detect and report unintended and imminent injuries and incidents generated by healthcare systems and health professionals ⁽⁷⁾. Reporting of PS incidents is also an essential and recognized tool for promoting PS, learning from mistakes, and preventing the recurrence of reported incidents ⁽⁸⁾. PS is the most important thing that healthcare systems seek to achieve through the services it provides, and medical errors within hospitals may lead to serious damage, accidents affecting patients, and huge cost losses ⁽⁹⁾. Thus, the importance and necessity of having systems for reporting PS incidents in their various forms emerged within hospitals, which are dependent on health workers. In addition, many previous studies have indicated the importance of the PS incident reporting system in health institutions and the obstacles that prevent the reporting process ⁽¹⁰⁻¹²⁾.

Despite the importance of reporting PS incidents, there is a weakness in this process within hospitals, due to several factors and barriers related to the lack of reporting of these incidents and related to the perceptions of health professionals which are as follows: increased workload, lack of time, fear of blame, fear of retaliation, lack of belief in improvement, the accident did not cause harm to the patient because it was imminent and did not happen, lack of knowledge of the accident reporting system, low rate of reporting incidents, lack of sufficient leadership for PS, poorly design of reporting systems, inadequate reporting systems, widespread culture punitive, fear of legal action, fear of economic loss, and fear of threats of job loss ⁽¹³⁾.

The systems for reporting PS incidents adopted forms that differ from one country to another according to the types of incidents that are reported and a framework for reporting adverse events developed by the World Health Organization (WHO) appeared. Subsequently, it worked on developing an information model related to PS incident reporting systems that are appropriate and can be adopted by developed, middle-income, and low-income countries. Despite this and the presence of a significant contribution by healthcare workers in order to report incidents related to PS, the rates of reporting these incidents show a clear and large difference, in addition to the fact that underreporting is still high among different countries ^(7, 9). However, some countries around the world are striving to develop and implement a reporting system for PS incidents within their hospitals ⁽¹⁴⁾.

To develop reporting systems at the hospitals level or at the national level, the administration role should be activated in supporting healthcare providers in reporting PS incidents, providing a voluntary electronic system for reporting to provide confidentiality and not knowing the correspondent because the primary goal is improvement and development and the process of education and awareness. Similarly, reducing errors and preventing their recurrence, streamlining procedures, learning for health care personnel from past incidents, detecting and preventing adverse events, and reducing error rates by formulating and disseminating recommendations aimed at changing and improving reporting systems^(14, 15). Additionally, it is important to provide continuous training for healthcare providers about reporting PS incidents in achieving the goals of health institutions and providing a safe environment for patients⁽¹⁵⁾.

The reporting of patient safety incidents in many health institutions and hospitals is very limited and there is a significant shortage of that. The reason is that physicians and nurses are reluctant to report medical errors and incidents within healthcare centers and hospitals^(16, 17). Consequently, this negatively affects the safety of health care provided to patients. In addition, most developed countries have developed voluntary, confidential, and anonymous electronic reporting systems that allow reporting of incidents and adverse events in an attempt to overcome the obstacles that prevent the documentation of PS events. Furthermore, incident reporting systems are associated with the costs of training employees to use them, as well as reporting, collecting, and analyzing data from these systems⁽¹⁶⁾. However, there is a weakness in the accident reporting system in government hospitals, so the main objective of this current research work was to determine the perceptions of healthcare providers about reporting system for PS incidents in hospitals. Specifically, assess the main factors that affect the incident report system through the perceptions of healthcare workers, know the perceptions of reporting system and improve this system in hospitals.

Methods

A cross-sectional study design was conducted, in which data and information were collected from 103 participating healthcare providers (28 physicians and 75 nurses) from **four hospitals in Makah, KSA**, at the level of healthcare provided for patients, as well as more freedom for healthcare providers working to express, and thus respond to the questions of the study that were chosen randomly and purposively during the period from January to March 2023.

Based on data and information on healthcare providers provided by hospitals, the study population included 2160 physicians and nurses working in four hospitals (504), while 103 respondents were healthcare providers (28 physicians and 75 nurses). The participants were qualified and had more than a year of experience to participate in the current study; workers in management and healthcare professionals who were on leave from work were excluded from this study.

The present study used and relied on a tool to collect data, which is a self-administered questionnaire designed by the researcher to achieve the objectives of the study, and it consists of two parts. The first part included the demographic information of the study sample, which included questions about gender, occupation, and educational level, place of work, years of work, the number of incidence reports reported, and participation in the incidence reporting system. Likewise, the second part of the questionnaire included 44 items to measure the perception of the patient safety incident reporting system among healthcare workers in hospitals and to answer the study questions. The questionnaire was originally in English and was translated into Arabic and reviewed by an experienced translator to verify its validity, accuracy, and compatibility with the objectives of the study.

The validity of the tool or questionnaire was verified by its submission to the

academic supervisor and a group of specialists in the field of study, and the scale validity was reported for the purposes of this study. While the stability of the tool was confirmed and verified by conducting the internal consistency test and extracting the stability coefficient (Cronbach's alpha) on the entire study sample, as the tool's stability coefficient (94.2%) was a good stability factor. The researchers further used a five-point Likert response scale to determine the degree of response of the respondents with options ranging from one (strongly disagree or never agree) to five (strongly agree or always agree) ⁽¹⁷⁾.

To achieve the desired objectives of the study, the required approvals were obtained from the university to conduct the research and distribute the questionnaire to healthcare providers, including nurses, physicians, and specialists. Therefore, they would answer the questionnaire containing a 5-point Likert scale to evaluate their agreement level with certain sentences regarding the availability and implementation of incidence reporting. Before filling out the questionnaire, they were explained how to answer the questionnaire and the importance of the study, and its purpose by the supervisor responsible for collecting the questionnaire. Then, the questionnaires were collected in the morning and evening periods, and their number was confirmed without revealing the participants identity. In addition, close coordination was made with the hospital administration to collect data through the questionnaire, and thus ensure that a high response rate was achieved. The score of the items is obtained by calculating the frequency and percentage of the participants' responses.

The data collection were examined, coded, edited, and entered into SPSS version 28, which is a statistical analysis program to answer the study questions and extracts the results for analysis. Descriptive statistics were used in the analysis of demographic characteristics (frequency and percentage), means, and standard deviations, to describe the views of the study sample variables and to determine the importance of items contained in the questionnaire, as well as the standard deviation to show the extent of the dispersion of responses from the arithmetic mean.

The t-test was further used to determine the independent variables and investigate the association between gender and workers who participated in incidence reporting with the scale responses. In addition, one-way ANOVA was performed and used to compare and investigate differences in the scale responses according to the healthcare workers' educational level, job, working place, working year in the hospital and the number of reported incidences in the last five years. Finally, the statistical analysis was achieved 94% confidence level. Statistical significance can be obtained through the p-value which is considered ($p < 0.05$).

The researchers obtain approval to conduct the study from the Ethics Committee at the University to facilitate the task of the researchers in distributing the questionnaire to the participants from the hospitals. The researchers also mentioned the objectives of the study to the participants, and all data will be dealt with in strict confidentiality. In addition, participation in the study is optional. Likewise, voluntary recruitment, valid withdrawal, privacy and confidentiality were preserved.

Results

After distributing 103 questionnaires to the participants to whom the inclusion criteria were applied and they fulfilled them to achieve the research objectives from health care providers, 103 questionnaires were returned and the response rate was 27.1% for doctors and 72.9 % for nurses. Therefore, the overall response rate was 100%.

Table (1): shows descriptive statistics and demographic characteristics of the participants (n=103). Regarding gender, more than half of the participants who were HCPs were male 57.3% (n=59), while 42.7% (n=44) were female. Among the 103 participants, 27.1% (n=28) were physicians and 72.9% (n=75) were nurses and supervisor nurses, and the majority of the participants were nurses 68% (n=70). Among the participants, 71.8% (n=74) had a bachelor's degree and 25.2% (n=26) of them were working in medical wards followed by emergency department 18.4% (n=19), while more than a two-thirds of the

participants (27.2%) (n=19) 28) work in other medical departments.

Regarding work experience, 40.8% (n=42) of the participants had work experience of more than 10 years, followed by those with work experience from 2 to 5 years 37.9% (n=39). More than half of the participants reported they used one incident report 55.3% (n=42), followed by those using two to five incident reports 22.3% (n=23) in the past five years, while more than half of them 52.4% (n=54) reported that they did not participate in the incident reporting system.

Table (2): shows the perceptions of respondents working in the healthcare field to the system for reporting PS incidents, a general agreement 31.1% agreed and 19.4% strongly agreed that the concept of incidence reporting is clear in the hospital setting environment, while 26.2% agreed that most physicians and nurses do not report incidences due to fear for their reputation, and 24.3% disagreed with them, as they did not agree with that. In addition, 32.0% of the respondents agreed and 46.6% strongly agreed that integrated work reduces the possibility of incidences, and the results showed that among the respondents 32% agreed and 45.6% strongly agreed that work pressure increases the likelihood of accidents.

Moreover, the response to reporting incidents and increasing the culture of reporting them was 28.2% agree, 41.7% strongly agree, 35% agree, and 40.8% strongly agree, respectively, while the response of the participants was 34% agree and 42.7% strongly agree that corrective and preventive measures should be taken when reporting patient safety incidents reduces the likelihood of their occurrence. Furthermore, the results showed that there is the moderate agreement through the response of participants that a written reporting system for incidents within the safety of patients in hospital is available and applied, and that incidents that were about to occur should be reported like full incidences.

Regarding the results of the items individually, they were analyzed based on the responses of participants in terms of agree and disagree, therefore the responses of agreeing ranged from 19.4% to 40.8%, so the lowest percentage was that for reporting on patient safety incidents is ethical imperative should be done and not following a blame and punishment policy increases the chance of reporting incidents, while the higher percentage that for sound-alike training reduces the occurrence of incidences. In addition, the responses of strongly agree varied greatly from 15.5% to 46.6%, where the lowest percentage was for the training health staff on the written incident reporting system within PS and the highest percentage was for working within an integrated health team that includes different specialties reduces the possibility of incidences. The result of these items was among 44 items (Table 2).

Moreover, the responses of disagree ranged from 1.9% to 28.2%, the lowest percentage was for working within an integrated health team that includes different specialties to reduce the possibility of incidences, and the highest percentage was for training health staff on written incident reporting system within PS, this result was for all items. Through these results, it was found that the respondents agree that proper training both reduces the incidence of accidents, and that working within an integrated health team that includes different specialties reduces the incidents probability, two factors are influential through healthcare workers' perception of the system for reporting patient safety incidents, but training workers health workers on the written accident reporting system is not an influential factor.

Table (3): shows the relationship between demographic characteristics of healthcare workers and their responses to the scale related to their perceptions of the PS incident reporting system was examined using a one-way ANOVA. Through the results, we found that there was no correlation between demographic characteristics and the responses of participants, as it was found that all characteristics have (p-value > 0.05). In

other words, it can be mentioned that there are no statistically significant differences between the demographic characteristics of healthcare workers and their responses to the scale.

Table 1: Demographic characteristics and variables of the study respondents in hospitals

Variable	Categorization	Frequency (n)	Percentage (n, %)
Gender	Male	59	57.3%
	Female	44	42.7%
Job	General practitioner	3	2.9%
	Resident physician	16	15.5%
	Specialist physician	9	8.7%
	Nurse	70	68.0%
	Supervisor nurse	5	4.9%
Educational level	Bachelor degree	74	71.8%
	Higher diploma	13	12.6%
	Master degree	16	15.6%
Work place	Emergency	19	18.4%
	Gynecology and obstetric	14	13.6%
	Operation room	12	11.7%
	Medical ward	26	25.2%
	Intensive care unit	4	3.9%
	Other	28	27.2%
Years of work in hospital	2-5 years	39	37.9%
	6-10 years	22	21.4%
	More than 10 years	42	40.8%
Number of incidence reports that you have reported during the last 5 years	One report	57	55.3%
	2-5 reports	23	22.3%
	6-10 reports	10	9.7%
	More than 10 reports	13	12.6%
Have you participated in Incidence reporting system?	Yes	49	47.6%
	No	54	52.4%

Table 2: Participant responses to the patient safety incident reporting system perception Items

Items	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
The concept of incidence and their classifications within the patient’s safety are clear among the hospital’s health staff.	4 (3.9)	17 (16.5)	40 (29.1)	22 (31.1)	20 (19.4)
A written incidence reporting system for patient safety is available in the hospital.	2 (1.9)	13 (12.6)	27 (26.2)	22 (31.1)	29 (28.2)
A written incidence reporting system for patient safety is implemented in the hospital.	0 (0.0)	18 (17.5)	24 (23.3)	28 (27.2)	33 (32.0)

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Items	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
Written incidence reporting system within patient safety is applied in the hospital with high efficiency.	4 (3.9)	21 (20.4)	25 (24.3)	29 (28.2)	24 (23.3)
Health staff is trained on the written incidence reporting system within patient safety.	6 (5.8)	29 (28.2)	21 (20.4)	31 (30.1)	16 (15.5)
Training on a written incidence reporting system within patient safety reduces incidence.	2 (1.9)	8 (7.8)	24 (23.3)	27 (26.2)	42 (40.8)
Most incidences are not caused by the negligence of health staff.	4 (3.9)	11 (10.7)	28 (27.2)	24 (23.3)	36 (35.0)
Instruments and tools play a role in incidence occurring.	1 (1.0)	3 (2.9)	23 (22.3)	30 (38.8)	36 (35.0)
Incidents are appropriately and efficiently examined in my workplace.	2 (1.9)	13 (12.6)	23 (32.0)	31 (30.1)	24 (23.3)
The patient has a role in preventing incidences.	1 (1.0)	14 (13.6)	23 (32.0)	33 (32.0)	22 (21.4)
Work pressure increases the incidences likelihood.	4 (3.9)	5 (5.8)	23 (12.6)	33 (32.0)	47 (45.6)
An emergency situation increases the incidences likelihood.	3 (2.9)	25 (24.3)	25 (24.3)	22 (31.1)	18 (17.5)
Most doctors and nurses report incidences.	3 (2.9)	8 (7.8)	22 (21.4)	35 (34.0)	35 (34.0)
If I commit an incidence, I report it myself.	4 (3.9)	16 (15.5)	23 (32.0)	27 (26.2)	23 (22.3)
If an incidence happened by someone else, I will report it myself as not reported.	5 (4.9)	25 (24.3)	28 (27.2)	29 (28.2)	16 (15.5)
If an accident happened by an official or supervisor, I will report it myself as not reported.	4 (3.9)	9 (8.7)	20 (19.4)	24 (33.0)	36 (35.0)
Reporting on an incidence is considered as a part of my job.	2 (1.9)	7 (6.8)	24 (23.3)	28 (27.2)	42 (40.8)
Reporting on an incidence is an ethical imperative that should be done.	9 (8.7)	26 (25.3)	25 (24.3)	20 (19.4)	23 (22.3)
Only incidences that cause harm to the patient and his family should be reported.	3 (2.9)	13 (12.6)	26 (25.2)	22 (31.1)	29 (28.2)
Incidences that cause psychological harm to the patient are part of incidents.	4 (3.9)	17 (16.5)	28 (36.9)	24 (23.3)	20 (19.4)
Physicians commit more incidences than nurses do.	6 (5.8)	18 (17.5)	20 (38.8)	26 (25.2)	13 (12.6)
Nurses commit more incidences than physicians.	5 (4.9)	21 (20.4)	22 (21.4)	24 (33.0)	21 (20.4)
Most physicians and nurses do not report incidences for fear of punishment by hospital administration.	2 (1.9)	25 (24.3)	26 (25.2)	27 (26.2)	23 (22.3)

Items	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
Most physicians and nurses do not report incidences for fear of retaliation from the patient's family.	3 (2.9)	17 (16.5)	44 (33.0)	41 (30.1)	18 (17.5)
Most physicians and nurses do not report incidences due to fear for their reputations.	5 (4.9)	21 (20.4)	40 (29.1)	40 (29.1)	17 (16.5)
Most physicians do not report incidences for fear of losing the patient.	5 (4.9)	3 (2.9)	38 (17.5)	47 (35.9)	40 (38.8)
The most skilled and qualified physicians may be subject to incidences.	4 (3.9)	7 (6.8)	22 (11.7)	40 (38.8)	40 (38.8)
The most skilled and qualified nurses may be subject to incidences.	3 (2.9)	5 (5.8)	22 (11.7)	47 (35.9)	45 (43.7)
Working in an integrated health team that includes different specialties reduces the incidences likelihood.	2 (1.9)	2 (1.9)	38 (17.5)	43 (32.0)	48 (46.6)
Full cooperation between doctor and nurse reduces the incidences occurrence.	4 (3.9)	3 (7.8)	44 (23.3)	41 (39.8)	26 (25.2)
Sound alike training reduces the incidences occurrence.	4 (3.9)	10 (9.7)	39 (18.4)	42 (40.8)	28 (27.2)
Look alike training reduces the incidences occurrence.	1 (1.0)	5 (4.9)	39 (18.4)	42 (31.1)	46 (44.7)
Incidences by a physician or nurse do not mean that he is negligent in his work.	1 (1.0)	3 (7.8)	46 (15.5)	47 (35.9)	41 (39.8)
Accidents happen by a doctor or nurse does not mean that he is not competent.	4 (3.9)	11 (10.7)	40 (19.4)	47 (35.9)	31 (30.1)
Near Miss incidences are considered incidences and should be reported.	2 (1.9)	9 (8.7)	44 (13.6)	46 (35.0)	42 (40.8)
Reporting incidences has a positive role in reducing the likelihood of their occurrence.	3 (2.9)	7 (6.8)	41 (20.4)	49 (28.2)	43 (41.7)
Increasing the culture of incidence reporting reduces the likelihood of their occurrence.	4 (3.9)	3 (7.8)	43 (12.6)	46 (35.0)	42 (40.8)
Feedback on incidence reporting reduces their occurring likelihood.	3 (2.9)	4 (3.9)	39 (18.3)	49 (37.9)	38 (36.9)
Taking corrective and preventive measures in the event of incidence reporting reduces the possibility of their occurrence.	3 (2.9)	5 (4.9)	46 (15.5)	45 (34.0)	44 (42.7)
Not to follow a blame and punishment policy increases the chance of reporting incidents.	5 (4.9)	21 (20.4)	38 (27.2)	40 (19.4)	29 (28.2)
A comfortable environment is provided for incidence reporting incidents among doctors and nurses.	7 (6.8)	7 (6.8)	47 (16.5)	42 (31.1)	40 (38.8)

Items	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
All accidents should be documented in writing and verbal reporting is not sufficient.	6 (5.8)	11 (10.7)	21 (11.7)	37 (35.9)	37 (35.9)
Dealing with the reporting of incidence by the administration is done in the strictest confidence.	8 (7.8)	22 (21.4)	21 (20.4)	28 (27.2)	24 (23.3)
The incidence reporting system should be obligatory implemented in the hospital.	3 (2.9)	9 (8.7)	7 (6.5)	29 (27.9)	35 (34.0)

Table 3: The correlation between demographic characteristics of healthcare workers and their responses to the scale

Variable	Categorization	Mean score (out of 5)	P-value
Gender	Male	3.75	0.558
	Female	3.68	
Job	General practitioner	2.94	0.092
	Resident physician	3.77	
	Specialist physician	3.93	
	Nurse	3.71	
	Supervisor nurse	4.01	
Educational level	Bachelor degree	3.68	0.118
	Higher diploma	3.64	
	Master degree	4.00	
Work place	Emergency	3.87	0.733
	Gynecology and obstetric	3.66	
	Operation room	4.01	
	Medical ward	3.81	
	Intensive care unit	3.26	
	Other	3.76	
Work years in hospital	2-5 years	3.57	0.085
	6-10 years	3.86	
	More than 10 years	3.81	
Number of incidence reports that you have been reported during the last 5 years	One report	3.60	0.111
	2-5 reports	3.89	
	6-10 reports	3.93	
	More than 10 reports	3.84	
Have you participated in incidence reporting system?	Yes	3.84	0.060
	No	3.62	

Discussion

The current study aims to determine the perceptions of PS incident reporting system among healthcare workers and to identify and evaluate factors affecting the incident reporting system to improve it. In addition, there is help focus the effort on the most appropriate and healthiest measures to prevent incidents that harm PS. Therefore, the results of this research provide important data and information to raise the level of incident reporting within hospitals. Several national studies have referred to the topic of perceptions of the PS incident reporting system from the viewpoint of doctors, nurses, or both in hospitals⁽¹⁷⁻²⁰⁾. The existence and development of a system for reporting PS incidents is a necessary procedure in government hospitals for the sake of PS, and this is what our study sought. Where this is consistent with what some studies have focused on, such as the attitudes of physicians and nurses and their perception of the incidents reporting system in hospitals and the importance of this system to enhance health care for patients^(21, 22).

In the present study, the results of perceptions of the incident reporting system by males 57.3% were more than that of females. This result is consistent with the results of some studies in some countries^(7, 23). This may be because hospitals were chosen and the majority of their employees are men. In addition, the number of participants was small compared with the number of workers in the field of health care, including physicians and nurses. Moreover, the result we obtained was important, in that the majority of participants in this study are nurses 72.9% and this helps in obtaining perceptions of the incident reporting system and evaluating it more accurately because nurses are the basis for providing health care to patients and most of their time is spent in this comparing with physicians^(24, 25).

Furthermore, nurses have a greater chance of making medical errors and therefore they have a perception and knowledge of the system for reporting PS incidents, and this result is consistent with recent studies conducted in several countries such as Korea, Ethiopia, and Canada^(7, 22, and 26). Thus, understanding the barriers through nurses' perceptions that impede incident reporting is important in terms of ensuring high-quality patient care, promoting, and supporting incident-reporting behaviors and practices in hospitals. The results indicated that the participants were healthcare providers from different departments, of which the most important were the emergency department, the surgical operating room, and the intensive care unit.

This gives good results about the participants' perceptions about reporting incidents because the workplace and the department play an important role and significantly affect the quality and number of PS related incidents, and those who report them, such as nurses, as indicated by a study conducted by Najjar et al., (2015)⁽²⁰⁾. In addition, there are medical departments with more risks than other departments and have errors that lead to accidents, such as surgical and pediatric departments, which are among the most important sources of reported PS incidents⁽¹⁵⁾. Similarly, studies conducted in Palestine⁽²³⁾ and Italy⁽²⁷⁾ on the comprehensiveness of several departments to determine health workers' perceptions of PS incidents, and through this, they concluded that there is a discrepancy in health workers attitude and perceptions towards reporting these incidents, the level of reporting system, and the number of reported accidents between departments of the same hospital and at the level of a number of hospitals.

The study included physicians and nurses who had experience, where the 40.8% of them had more than ten years of experience, and this helps in giving a more accurate perception of the reporting incidents system in hospitals. This is because the attitude and perception of nurses toward the culture of PS and practices for safety procedures and avoiding mistakes and incidents differ from one department to another and hospital to another. This has been indicated by two studies by Abu-El-Noor et al., (2019)⁽²⁸⁾ and Cha and Choi, (2015)⁽²⁹⁾. As experience has a role, especially in terms of the types and number of reported incidents, the level of incident reporting system applied in these hospitals, or

the deficiencies in its application.

Similarly, years of experience in work make nurses and physicians more careful not to make mistakes that may lead to incidents for fear of being marked in their records, which may negatively affect their profession, and that is why the number of reported incidents decreases. This result was associated with the low number of incident reports used by the participants in this study, where 55.3% reported that they used only one report, and 52.4% reported that they did not use any report that they participate in the accident reporting system in the past five years. This may explain because the majority of the participants in the current study had more than five years of experience. This result is supported by the study conducted by Sosa-Palanca et al., (2022)⁽³⁰⁾ as it was concluded that nurses with more years of experience have a better perception of reporting incidents and errors, and they fear exposure to the issue if something goes wrong, and therefore fewer reporting incidents related to PS⁽³⁰⁾.

The results related to the physicians' and nurses' perceptions of the PS incident reporting system in the current study showed that about 51% of healthcare providers stated that the concept of reporting incidents in their hospitals is clear and can be implemented. This means that there is a significant effect between the perceptions of physicians and nurses in hospitals about the incident reporting system and the reporting of incidents that occur. Also, this indicates that doctors and nurses have a culture and knowledge about the reporting system and reported accidents. This result is consistent with the findings of a study conducted in the Kingdom of Saudi Arabia, which stated that there is a correlation between physicians and nurses' knowledge of the reporting system correctly and their perceptions of reporting PS incidents⁽³¹⁾.

In spite of what was indicated by several studies, as it indicated that when healthcare providers have awareness about PS, their perception of accident reporting is more vivid and that reporting helps in raising the level of healthcare quality and thus increasing PS by playing a role in preventing more incidents. Moreover, this will help strengthen their courage to learn how to report accurately^(5, 17, 32, and 33). Thus, the concept clarity of reporting among healthcare workers is a point to focus on, because the clarity of reporting incidents in the minds of healthcare providers helps increase their awareness and the level of their attitude towards correct reporting systems.

Likewise, among the important results is that 26.2% of doctors and nurses stated that one of the reasons for not reporting incidents is fear for their reputation. This means that their perception of reporting incidents affects the reporting process itself, as they see that reporting incidents expose them to the issue and is done as we mentioned in our discussion in the previous paragraphs that this was recorded as a negative point in their records, in addition to their fear of punishment. Our findings were supported by the study of Skutezky et al., (2022)⁽²⁶⁾, Sosa-Palanca et al., (2022)⁽³⁰⁾ and Burlison et al., (2020)⁽³⁴⁾.

Generally, when healthcare providers do not have the courage and awareness of the importance of reporting incidents in terms of enhancing PS, this leads to a weakness in the incident reporting system in hospitals, as well as an increase in punitive that prevent the process of reporting incidents, and thus endangers PS. We conclude that there is a significant effect between the systems of reporting accidents by healthcare workers and PS. Therefore, stakeholders such as managers and supervisors in government hospitals should make efforts to promote a culture of reporting incidents and their relationship to PS among healthcare workers also make them feel safe and have a positive perception towards reporting incidents. Moreover, the reports in which they report an incident or error related to the safety of patients are mainly to preserve their rights and the PS and not in order to receive penalties and blame.

One of the important results that we obtained is that there are factors that reduce the probability of incidents occurring in hospitals, and these factors are: firstly the

integrated and university work between physicians and nurses, as 79% of the participants in our study reported this, and secondly, taking corrective and preventive measures when reporting patient safety incidents, which was represented in medication rights, preventive measures to prevent falls, and interest in increasing the effectiveness and activity of safety measures, these measures have been mentioned by Yeh et al., (2018)⁽³⁵⁾ in their study, where this was reported by 77% participants. Therefore, through these results, it is clear that there is a great awareness regarding PS and knowledge of the accident reporting system among healthcare providers in hospitals.

These findings are consistent with the study by Chaneliere et al., (2018)⁽³⁶⁾ that indicated major factors associated with the occurrence and reporting of incidents. There are also factors that increase the likelihood of incidents related to PS in hospitals, which were indicated by the results, where these factors were represented in work pressure, as 77% of the participating physicians and nurses perceived that this is one of the factors affecting the occurrence of incidents and their reporting system in hospitals. Furthermore, work pressure may lead to anxiety, stress, severe nervousness, and extreme fatigue, as explained by Chaneliere et al., (2018)⁽³⁶⁾ in their study, which may cause mistakes to be made during the professional practice, and thus the occurrence of accidents that harm and affect the PS.

One of the objectives of this study was to evaluate the factors affecting the incident reporting system among healthcare workers in hospitals. Thus, we found from the findings on healthcare providers' perception of the incidents themselves that 35% strongly agreed that incidents are not caused by staff negligence, and this is a key point on which assessment of incident reporting systems should focus. Hence, there is an importance and necessity for continuous evaluation of any policy in health institutions, as well as an attempt to develop it to meet the global criteria of reporting as the criteria of the World Health Organization (WHO)⁽³⁷⁾. In addition, evaluation plays a major role in focusing on weaknesses in reporting, the quality of reports submitted to quality departments, and the need to improve the quality of reports to prevent neglected reports because they are poor, even if the incidence itself is worth correcting.

Through the results of the current research, it is possible to improve and develop the system of reporting incidents and PS among healthcare workers in hospitals, through an increase in incident reporting reports and not punishing healthcare providers when making mistakes, which raises their courage and confidence in the necessity of reporting about incidents. In addition, to improve the reporting system, the reported incidents should be followed up and how they occurred, and thus the rate of PS incidents can be reduced. Furthermore, systems should be found and designed to record and follow-up incidents, and to know the causes of their occurrence, and thus avoid their recurrence. Finally, government hospital managers and health officials should work to enhance PS among HCPs by training them to report accidents and explaining its importance to raise the quality of health care in hospital.

Conclusion

Incident reporting is one of the most important evaluation tools of quality in any health institution, and it has been proven to play a major role in focusing on the essential areas of correcting, as well as enhancing the services provided in hospitals, which will be reflected on more patient satisfaction and improving the quality of health care and PS. The results of our study showed that the majority of participants are nurses, and they have moderately general acceptance of the availability of case of incidence reporting, and this helps to focus on possible areas of correction to improve the provided services and prevent further adverse incidents. It was also verified through the perceptions of physicians and nurses participating in our study that there are factors affecting the incident reporting systems.

It was further concluded that the opinion regarding incidence reporting is equal for healthcare providers, as there was no significant correlation between the demographic characteristics of healthcare workers and their perception and attitude toward reporting, and there was also no significant correlation between the healthcare providers' perceptions and their attitudes and their participation or non-participation in the reporting system for PS

incidents. Finally, in this study, we concluded that it is important to evaluate possible interventions that may increase the level of knowledge and perception of healthcare providers towards reporting incidents, which can be done through conducting further studies, and using different methodological approaches such as thematic qualitative analyses, which will help investigate ideas about the possible correcting interventions regarding better incidence reporting.

Therefore, the most important recommendations of the current study were to increase the level of awareness of the necessity of reporting incidents tools and guidelines that assist in increasing the accuracy of incidence reporting and prevention from them among healthcare providers, which will reflect on better implementation of reporting. It also recommends developing tools to enhance communication between different healthcare specialties, such as between nurses and physicians, to reduce the undesired communication gap between them. Furthermore, it is strongly recommended that further studies should be conducted with thematic quantitative approaches having focus on healthcare providers' opinions regarding the most common barriers to incidence reporting.

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