

# Incident Reporting Culture Among Nurses At Edku Central Hospital

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## **Abstract**

**Background:** Preventable errors in healthcare are a major problem in today's society that contributes to many negative outcomes for patients and even deaths on a daily basis. Identifying negative outcomes is a necessary first step in creating a safer healthcare system, which can be followed by analysis of cause and action plans to address systemic problems and improve the process of reliability. Although, voluntary reporting systems are widely used to identify negative outcomes, recent literature has found severe limitations and severe underreporting in healthcare organizations. In order to identify medical errors, learn from errors and improve patient safety; the healthcare community introduced a culture of incident report. Incident-reporting culture is a voluntary, anonymous, and confidential analysis system that allows the reporting of incidents and adverse events for analysis by experts in quality improvement and patient safety. **Objective:** To investigate incident reporting culture among nurses at Edku Central Hospital. **Settings:** The study was carried out in all inpatient units at Edku Central Hospital at El Behera Governorate, Egypt. **Subjects:** The study subject will include (N=200): Nurse Manager (Directors, and their assistants) (N=3), First Line Nurse Managers (FLNM) (Head Nurses, and their assistants) (N=20), and staff nurses who will be available at the time of data collection in the previously mentioned units (N=177) distributed as follows: medical N=30, surgical N=35, critical N=69, obstetric N=11, and pediatric N=32 with experience more than 6 months. **Tools:** Incident reporting culture sheet will be used for the purpose of this study. **Results:** More than two-thirds of nurses (70.5%) perceived moderate level of incident reporting culture and (5.5%) of nurses perceived high level of incident reporting culture. **Conclusion:** More than two-thirds of nurses have moderate level of incident reporting culture. **Recommendations:** nurse director of Hospital should: provide in service education programs for all nurses to keep them up date regarding incident-reporting culture and improving nurses' awareness about incident report tool and process.

**Keywords:** Healthcare organizations, incident-reporting culture, and nurses.

## **Introduction**

Healthcare organizations have become dangerous places for patients, as medical errors have become harmful to patients. In order to identify medical errors, learn from errors and improve patient safety, the healthcare community has introduced incident-reporting culture. Culture of incident reporting is the shared values, beliefs and

principles among nurses, which can influence their organizational communication, social relations and their actions and motivations for reporting incidents such as errors, adverse events and near misses ( Sammer, Lykens, & Singh 2010).

It facilitates learning from past mistakes to prevent future damage, however, it has been suggested that the success of the incident reporting culture is determined by

the attitudes and perceptions of nurses. Many patient safety accidents are rarely reported, especially in cases where patients are not exposed to any permanent damage. This may be due to the reluctance among nurses to report the error due to fear of revenge, or the idea that since the error did not cause a major problem, and there is no problem.

Hence, concerns about recurring and damaging medical errors have led to efforts to design and deploy incident-reporting system for hospitals and healthcare systems. Incident reporting system is the scoring system by which incidents are regularly reported. These scoring systems may be voluntary or mandatory, manual or electronic and set up at the hospital or national level. By learning from mistakes, organizations can manage internal knowledge and establish an organizational learning mechanism. In this light healthcare organizations, must have cultures of incident reporting, which enable frontline professionals to report accidents frankly, learn from mistakes openly, deal with accidents effectively and commit to safety and quality wholeheartedly.

According to NHS Scotland Incident Reporting Culture developed six organizational dimensions to measure incident-reporting culture; **individual attitude to mistakes**; which indicates the causal mistake that nurses realize the need to report all errors or do they only keep a mental note of them and make sure they do not make it at second time. **Management attitude to mistakes**; shows the causal mistake that management carries are originally caused by individuals instead of systems. This will frustrate open reports and will promote the Culture of blame. **Perceived consequences of admitting to a mistake**; explains whether nurses feel that get, closer to errors may negatively affect them personally and

professionally. If nurses think in this way, this will frustrate reporting of incidents. **Organizational sharing of experience**; refers to the organization has a culture that nurses feel to be able and are encouraged to participate experience. **Organizational response to problems**; turns out that whether the organization seen as a respondent, where there is found little feedback, or proof of this. **Characteristics of the incident reporting system**; focuses on how it is easy to inform errors and how easy is it for my institution to use the knowledge in finding the real causes of errors.

### *Aims of the Study*

This study aims to investigate incident-reporting culture among nurses at Edku Central Hospital.

### *Research question*

What is the incident reporting culture among nurses at Edku Central Hospital?

### *Materials and Method*

#### *Materials*

**Design:** A descriptive research design was followed to conduct this study.

**Settings:** This study was conducted in in all inpatient units at Edku Central Hospital at El Behera Governorate, which affiliated to the Ministry of Health and Population with bed capacity 175 beds. It is considered the largest hospital in El Behera Governorate providing multiple services such as medical, surgical, critical, obstetric, and pediatric services. It includes 10 units as follows: medical (n=2), surgical (n=3), critical (n=3), obstetric (n=1), and pediatric (n=1).

**Subjects:** The study subject involved all nurses who are working in the previously mentioned setting (N=200) classified as:

- Nurse Manager (Directors, and their assistants) (n=3).

- First Line Nurse Managers (FLNM) (Head Nurses, and their assistants) (n=20).
- Nurses who were available at the time of data collection (n=177).

**Tools:** In order to collect the necessary data for the study one tool was used:

**Tool I: Incident reporting culture sheet.**

It was developed by National Health Service (NHS) Scotland Incident Reporting Culture (2007) to assess incident-reporting culture. It consists of 60 items divided into six dimensions, these are individual attitude to mistakes (n=8 items), management attitude to mistakes (n=8 items), perceived consequences of admitting to a mistake (n=14 items), organizational sharing of experience (n=11 items), organizational response to problems (n=5 items), and characteristics of the incident reporting system (n=14 items).

-Responses was measured on five point Likert scale ranging from strongly agree (5) to strongly disagree (1).

-The high score, the high nurses' perception of incident reporting culture and vice versa.

-The total score ranged from 60-300; The high score means the high nurses' perception of incident reporting culture.

High level= 240– 300 score 80%-100%  
Moderate level= 180– 239 score 60%-79%  
Low level= 60– 179 score 80%-100%

**Besides**, personal characteristics such as: age, gender, working unit, job title, educational qualification, years of experience, and marital status.

**Method**

1. An official permission to conduct the study was obtained from the Dean Faculty of Nursing, Damanhour University, and administrative authority of selected hospital after explanation the purpose of the study.

2. The tool was translated into Arabic language and was submitted to five panel

experts in the field of the study for testing content validity and then necessary modification were done such as simple related words were used.

3. Reliability of the tool was examined using cronbach's alpha 0.834 reliability was computed and found indicating good reliability.

4. A pilot study was carried out on 10% (n=20) of participants of nurses, they are not included the study subjects, in order to check and ensure clarity and applicability of the tools ; identify obstacles and problems that may be encountered during data collection and estimate the time needed to fill the questionnaires then, any necessary modifications was done such as some question were revised or rearranged to be easily understood and simple related words were used.

5. Data was collected from the study subjects by the researcher through self-administered questionnaire; it was hand delivered to staff nurses at the work settings. The time needed to complete the tool scale items were 15-20 minutes.

6. Data collection was conducted by the researcher through hand delivered questionnaire to nurses, and took two months from 1/5/2020 to 30/6/2020 to investigate incident-reporting culture.

**Ethical considerations:**

- A research plan was submitted to ethical committee, Faculty of Nursing for research approval.

-A written informed consent was obtained from study subjects to collect data of study after explanation of the aim of study.

-Privacy of subjected nurses to the study was maintained.

-Anonymity of subjected nurses to the study was maintained.

-Confidentiality of the collected data was maintained during implementation of the study.

-Right to withdraw to participants in the research was assured.

### Statistical Analysis

-The collected data were coded and entered in special format to be suitable for computer feeding.

-Following data entry, checking and verification process were carried out in order to avoid any errors.

-Data were analyzed using the statistical package for social science SPSS (version 25).

-The following statistical analysis measure were used:

- **Descriptive statistical measure**, which included: numbers, percentages, and averages (Minimum, Maximum, Arithmetic mean ( $\bar{X}$ ), Standard deviation (SD)).
- **Statistical analysis tests**, which included Chi square, student T test and regression analysis.
- **Graphical presentation** included: Bar graphs were done for data visualization.

### Results

**Table 1** presents the personal characteristics of studied nurses. As can be seen, more than half (60.5%) of nurses were in the age group of 20 to less than 30 years old with mean score (28.05 ± 4.739). Majority (94.5%) of nurses were female, and more than one third of nurses (38.1%) were working in critical care units.

Majority (88.5%) of nurses are staff nurse. In relation to their level of education, more than one-half (57.0%) of nurses had technical nursing institute diploma, and more than one-half of nurses (59.5%) had less than five years of experience with mean score (5.36±5.125). More than two third (79.5 %) of them were married.

**Table 2** demonstrates levels of incident reporting culture. More than two-thirds of nurses (70.5%) have moderate level of incident reporting culture and (5.5%) of nurses have high level of incident reporting culture. As regards subdimensions of incident reporting culture; majority of nurses (90.5%, 86.5%, and 76.5%) have moderate level of incident reporting culture regarding organizational response to problems, individual attitude to mistakes, and perceived consequences of admitting to a mistake respectively.

However, slightly more than half of nurses (55.5%, and 52.0%) have moderate level of incident reporting culture with management attitude to mistakes, and characteristics of the incident reporting system, and (70%) of nurses have low level of organizational sharing of experience.

**Table 3** shows that nurses in hospital units namely medical units, surgical units, critical units, obstetrical units, and pediatric units have moderate mean score (189.82±19.584) regarding incident reporting culture. However, nurses in obstetrical units have the highest mean score regarding incident reporting culture (193.80 ±22.454), and nurses in pediatric units have the lowest mean score (188.00 ±21.409).

**Table 4** reveals statistical differences between incident reporting culture levels and classification of nurses' (p=0.000\*). All manager (100%) have high level with incident reporting culture, but manger assistant divided into two half (50.0%) one half (50.0%) have moderate level and other (50.0%) have high level with incident reporting culture. More than 50% of head nurse (60%) have high level with incident reporting culture, but more than 50% of head nurse assistant (70%) have moderate level with incident reporting culture. Less than (1%) of nurses' (0.6%) have high level with incident reporting culture.

## ***Discussion***

Incident reporting culture means creating an atmosphere in which hospital staff can report patient safety concerns fairly and without fear of blame. It is an organized approach to report near misses or adverse events to enable improvement. (Fukami, Uemura, & Nagao Y, 2020).

Incident-reporting culture is a voluntary, anonymous, and confidential analysis system that allows the reporting of incidents and adverse events for analysis by experts in quality improvement and patient safety. However, incident information is no value if the incident is not reported. Therefore, assessing incident-reporting culture (IRC) in hospitals is valuable to achieve the target safety culture and performance. (Soo, Jin, & Rok, 2018).

**The main findings of the current study revealed that regarding the level of nurses' of overall incident reporting culture,** the result of the present study revealed that about more than two-thirds of nurses have moderate level of incident reporting culture. This result may be attributed to insufficient knowledge, negligence attitude, lack of supervision, inadequate training and insufficient support from management to facilitate work. This result is supported by a study done in Egypt by **Gaafer (2008)**, another study done in Taiwan by **Chiang et al., (2011)**, and a study done in China by **Yang, and Liu (2021)** they found that the nurses have a moderate level of incident reporting culture because they have lack of supportive environment to work.

However, this result is inconsistent with, a study done in Norwegian by **Vifladt et al., (2015)** who found that low level of incident reporting culture due to low level of culture. As well as, a study done in Ethiopia by **Haileselassie (2016)**, and a study done in Brazil by **Agegnehu et al., (2019)** they found low level of incident reporting culture due to there is no a system that promote incident reporting culture, fear of

administrative sanctions, fear of legal penalty, and lack of education, training, and communication.

**Regarding nurses level of incident reporting culture in hospital units,** nurses' who are working in pediatric units have the lowest mean score regarding incident reporting culture. This may be related to that nurses' in pediatric units have low training, and knowledge regarding incident reporting culture. Pediatric patients have immature language and social skills, developing physiology, the need for special equipment, and relatively smaller airway and blood vessels can increase the incidence of errors and actual harm to pediatric patients. This study is consistent with a study done by **James et al., (2004)**, and a study done by **Rene et al., (2019)** they found low level regarding incident reporting culture in pediatric units because there is no found culture of incident report there. This study is inconsistent with a study done in Japan by **Fukami, Uemura, and Nagao (2020)** who found that high level regarding incident reporting culture in pediatric units.

**In this study revealed** statistical differences between incident reporting culture perception levels and classification of nurses'. More than two third of nurses have moderate level of incident reporting culture. This result may be attributed to insufficient knowledge, negligence attitude, lack of supervision, inadequate training and insufficient support from management to facilitate work. This result is supported by a study done in Egypt by **Gaafer (2008)**, another study done in Taiwan by **Chiang et al., (2011)**, and a study done in China by **Yang, and Liu (2021)** they found that the nurses perceived a moderate reporting culture because they have lack of supportive environment to work.

However, this result is inconsistent with, a study done in Norwegian by **Vifladt A et al., (2015)** who found that low level of incident reporting culture due to low level of



culture. As well as, a study done in Ethiopia by **Haileselassie (2016)**, and a study done in Brazil by **Agegnehu et al., (2018)** they found low level of incident reporting culture due to there is no a system that promote incident reporting culture, fear of administrative sanctions, fear of legal penalty, and lack of education, training, and communication.

**Regarding the relationship between the studied nurses' incident reporting culture levels and their personal characteristics**, the result of this study indicated that statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in marital status, level of education, and job title. Regarding marital status (majority of married nurses' have moderate level with incident reporting culture) because they have stability in social status. this study result is in the line with a study done in regional or larger hospitals by **Lee, Yang, and Chen (2015)** who found that statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in marital status.

Regarding level of education (majority of technical secondary school have moderate level with perception of incident reporting culture) because they have more knowledge and training. This study result is in the line with a study done in regional or larger hospitals by **Lee, Yang, and Chen (2015)**, and a study was done in units with a Norwegian Hospital Trust by **Vifladt et al., (2015)** they founded that there is statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in level of education. Regarding job title (all manager have high level with perception of incident reporting culture) may be attributed to that they are more training and experience about incident reporting culture. this study result is in the line with a study done in regional or larger hospitals by **Lee, Yang, and Chen (2015)** who found that statistical differences between

the studied nurses' incident reporting culture levels and their personal characteristics in job title.

This study is inconsistent with a study was done regional or larger hospitals by **Lee, Yang, and Chen (2015)** who found that statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in age, gender, working units, and years of experience. Also a study was done a study was done in units with a Norwegian Hospital Trust by **Vifladt et al., (2015)** founded that there is statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in age , years of experience, gender, and years of experience. Another study in Taiwan by **Chen et al., (2018)** who reported that there is statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in age and years of experience. In addition to, a study done in Indonesia by **Agustian, Nurbaity, and Linda (2020)** this study shows that statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in years of experience. Also a study done in Iran by **Najafpour et al., (2021)** who reported that statistical differences between the studied nurses' incident reporting culture levels and their personal characteristics in age, gender, and years of experience.

### **Conclusion**

Based upon the findings of the current study, it could be concluded that there was statistical significant difference between nurses' personal characteristics and dimensions of incident reporting culture (individual attitude to mistakes, management attitude to mistakes, perceived consequences of admitting to mistakes, organizational sharing of experience, and organizational response to problems) except characteristics of the incident reporting system.

### **Recommendations**

*In line with the findings of the study, the following recommendations are made:*

- Nurse director of Hospital should: provide in service education programs for all nurses to keep them up date regarding incident-reporting culture and improving nurses' awareness about incident report tool and process.
- Nurse manager should: assess and follow up nurses as they follow incident-reporting culture, using motivation aspects and punishment method to ensure higher levels of incident-reporting culture.
- Nurses follow organizational polices, rules, and regulations regarding incident-reporting culture.

**Table (1): Personal characteristics of nurses: (n=200)**

Personal characteristics		Total N=200	
		No.	%
<b>Age (years)</b>			
20-		121	60.5
30-		74	37.0
≥40		5	2.5
Min – Max	21 – 46	Mean ± SD	28.05±4.739
<b>Gender</b>			
Male		11	5.5
Female		189	94.5
<b>Working unit</b>		<b>N= 197</b>	
Medical units		34	17.3
Surgical units		39	19.8
Critical care units		75	38.1
Obstetrical units		15	7.6
Pediatric units		34	17.
<b>Job title</b>			
	Manager	1	0.5
	Manger assistant	2	1.0
	Head nurse	10	5.0
	Head nurse assistant	10	5.0
Staff nurse		177	88.5
<b>Educational qualification</b>			
	Bachelor of Nursing	37	18.5
	Technical Nursing Institute Diploma	114	57.0
	Technical Nursing Secondary School Diploma	49	24.5
<b>Years of experience</b>		<b>N= 200</b>	
< 5		119	59.5
5-		40	20.0
10-		19	9.5
15-		18	9.0
20-25		4	2.0
Min – Max	6 months– 25 years	Mean ± SD	5.36±5.12
<b>Marital status</b>		<b>N= 200</b>	
	Single	39	19.5
	Married	159	79.5
	Divorced	2	

**Table (2): Levels of nurses to incident reporting culture: (200)**

	Items	Levels of Incident Reporting Culture Perception (N=200)					
		Low		Moderate		High	
		No.	%	No.	%	No.	%
1	▪ Individual attitude to mistakes	13	6.5	173	86.5	14	7.0
2	▪ Management attitude to mistakes	56	28.0	111	55.5	33	16.5
3	▪ Perceived consequences of admitting to a mistake	35	17.5	153	76.5	12	6.0
4	▪ Organizational sharing of experience	140	70.0	51	25.5	9	4.5
5	▪ Organizational response to problems	0	0.0	181	90.5	19	9.5
6	▪ Characteristics of the incident reporting system	86	43.0	104	52.0	10	5.0
	<b>Total Incident reporting culture perception</b>	48	24.0	141	70.5	11	5.5



**Table (3): Mean score of nurses to incident reporting culture in hospital units: (n=200)**

Units	Mean ± S.D	Mean percent score
• Medical units	191.35 ±21.597	63.78
• Surgical units	189.90 ±19.601	63.30
• Critical units	189.01 ±17.760	63.00
• Obstetrical units	193.80 ±22.454	64.60
• Pediatric units	188.00 ±21.409	62.67
• <b>Total</b>	189.82±19.584	63.27

High level = 240– 300 score 80%-100% Moderate level = 180– 239 score 60%-79%  
 Low level = 60– 179 score 80%-100%

**Table (4): The relationship between incident reporting culture levels and classification of nurses: (n=200)**

Items	Levels of incident reporting culture						Total N=200		Test of significance
	Low (N=48)		Moderate (N=141)		High (N=11)				
	No	%	No	%	No	%	No	%	
<b>Job title</b>									
• Manager	0	0.0	0	0.0	1	100.0	1	0.5	X <sup>2</sup> = 95.117 P=0.000*
• Manger assistant	0	0.0	1	50.0	1	50.0	2	1.0	
• Head nurse	1	10.0	3	30.0	6	60.0	10	5.0	
• Head nurse assistant	1	10.0	7	70.0	2	20.0	10	5.0	
• Staff nurse	46	26.0	130	73.4	1	0.6	177	88.5	

X<sup>2</sup> Chi Square Test \* Statistically significant at ≤ 0.05

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