Original Research Article

Barriers and Strategies of Reporting Medical Errors at Benghazi Medical Center: A Cross-Sectional Study in Benghazi City , Libya

ABSTRACT

Background: Reporting medical errors (MEs) prevents potential harm to the patient. This is while patient safety is a major priority in the health system and focuses on the goal of preventing medical errors before these errors cause death, injury, or harm to the patient so medical errors are one of the major factors affecting the quality of hospital services and reducing patient safety in health care systems.

Aims: To study the Barriers and Strategies of Reporting Medical Errors (MEs) atBenghazi Medical Center (BMC).

Methods: A cross-sectional study was conducted fromAugust to October 2021 at Benghazi Medical Center (BMC). The data was collected using a validated questionnaire where random sampling was used to represent the BMC, a represented sample of 500 clinical staff (280 physicians, 220 nurses)

Results: 219 nurses and 281 physicians from the sample stated that reporting medical errors was inadequate. The highest mean for measuring the barriers that prevent the reporting of medical errors was 3.4749 for nurses, and 3.6263 for physicians, which represents medical error reporting is inadequate. Whilemeasuring Strategies for Improving the Reporting of medical errors was 4.5662 for nurses, and 4.7794 for Physicians, which representsThere should be clearguidelines and procedures for reporting errors.

Conclusion:The highest measuring the barriers that prevent the reporting of medical errors was the complexity of the work, while the highest measure in the strategy to improve the reporting system was the necessity of having clear controls and procedures for reporting medical errors.

Keywords: *medical error reporting; public hospitals; barriers and strategies; public health*

1-INTRODUCTION

Hospitals are among the most crucial settings for the delivery of healthcare services and the practice of medicine, and they typically expand To run and manage these various expectations of the hospital, which come from the large number of patients they receive, they must use methods or functions that help them achieve their objectives [1]. “The objective Whether it is obvious or damaging to the patient, a medical error (ME) is a preventable unfavorable result of medical treatment and is a significant public health issue that could endanger patient safety” [2]. At the moment,eliminating medical errors is a global problem. It is a breach of the care protocol that might or might not have consequences [3].

A medical error can take place in any healthcare setting in the form of an ‘adverse drug event, surgical injuries, improper transfusion, and wrong site injuries, falls, burn, pressure ulcers and mistaken patient identity or even death’ [4].

Any healthcare process will inevitably contain some errors [5]. It could happen at any stage of the medical procedure and lead to severe problems. These mistakes endanger the health and well-being ofpatients, and their recurrence lowers the standard oftreatment delivered [6].To reduce error rates to the absolute minimum is the problem [5]. An important topic frequently addressed in ethical and professional guidelines is the disclosure ofmedical errors (MEs). It permits prompt and proper treatment of numerous unforeseen events andupholds patient and healthcare provider trust [7]. Methods that might be employed to lessen and stop prospective ME instancesEncouragement of incident reporting, consultation with more knowledgeable andexperienced colleagues during uncertain procedures, teaching patients about the use and effects ofvarious medications, and teamwork with colleagues to enhance service delivery are some of the initiatives that can be modified to reduce

MEs.Theparticipants named many strategies that healthcare organizations might employ to stop potential MEs in service delivery in the future [8].

Medical errors (MEs) are defined as errors made by medical experts that damage people rather than benefit themthere will always be medical mistakes of all types, and they can happen at any point during treatment [9].“Management ofmedical errors can be approached from two different angles: the individual and the system approaches. Theindividual approach emphasizes individual mistakes and attributes them toforgetfulness, carelessness, or moral apathy. The system approach focuses on thecircumstances in which people operate and attempts to create barriers to prevent errorsor lessen their effects”[9]. “As indicated in the preceding sentence, nurses noted that one of the probable reasons for medical errors is having obligations unrelated to their employment”[10].

“The Barriers definitions as Fear of being blamed for the error is by far the most reported fear, providers reported fear of losing their' s jobs, fear of patient's or family's response to the ME, fear of being recognized as incompetent, fear oflegal consequences, fear ofpunishment, and fear oflosing respect by coworkers were also commonly reported” [11].

The majority of errors happened during the morning shift, which maybe related to the fact that employees are under more pressure and must complete their work more quickly during this period.
Time-consuming has been noted that a busy work schedule and a heavy workload are key reasons for underreporting. Additionally, reporting itselftakes time and isdifficult. paper-based and computerized reporting techniques both require a lot of time, time restrictions were cited as a deterrent to reporting ME by physicians more often than by nurses [12].

Strategy definition is a step managers take to fulfill one or more of the objectives of the company. An overall direction established for the business and its numerous parts to achieve adesirable condition in the future is another definition of strategy. The process of meticulous strategic planning yields strategy.“Improving patient safety is important in health care programs for nearly all policy and decision-makers in public health worldwide. 'Healthcare facilities should create a sense of trustworthiness and safety', Besides and despite 'the healthcare system's best efforts; people are injured due to an unorganized and overwhelmed healthcare system'. The Institute of Medicine's legendary report recentlystated at least 44,000 persons and perhaps as many as 98,000 people die in hospitals each year as a result of a medical error that could have been prevented” [13].

2. METHODS

2.1 Study Design

A cross-sectional study was conducted at Benghazi Medical Center (BMC) in Benghazi City, Libya

2.2 Study Population

The study population comprised all physicians and nurses in departments at Benghazi Medical Center (BMC) during the period between (August to October /2021), where the sample was randomly selected from 500 clinical staff.

2.3Sample Collection

The data was collected using a questionnaire where random sampling was used to represent the BMC, a represented sample of 500 clinical staff (physicians, nurses) 280 were physicians, and 220 were nurses.
The questionnaire was developed by evidence [10]and adopted by the researchers. The questionnaire used Likert’s scale and consists of 3 following sections:

- Section 1: asks about the type of hospital and demographic information.
- Section 2: asks about barriers that prevent reporting of medical errors.
- Section 3: asks about strategies that could improve reporting of medical errors.

2.4 Statistical Analysis

After the data was collected it was revised, coded, and fed to statistical software "SPSS" version 23, the quantitative variables were presented as means, standard deviations, and percentages.
Reliability for all statements was exanimateby Cronbach's Alpha in this study 790 implying that the instrument is highly reliable at 79%.

3. RESULTS

Table 1 shows the demographiccharacteristicsoftheparticipants. The results indicate that the majority ofthe sample were Libyan (95.4%). The gender distribution was also significantly different between the two groups, with a percentage of (71.8%)being females.43.8% refers to the age category from (31-40) years. Most of the participants have got bachelor's degree(49.4%). 56.2% were physicians.69.2% of the study population have work experience of up to 10 years.

Table (1): The demographiccharacteristicsoftheparticipants (N=500)

DemographicCharacteristics	Frequency	Percent%
Gender		
Male	141	**28.2%**
Female	359	**71.8%**
Nationality		
Libyan	477	**95.4%**
Non-Libyan	23	**4.6%**
Age Category (Years)		
20-30	204	**40.8%**
31-40	219	**43.8%**
41-50	58	**11.6%**
>50	19	**3.8%**
Occupation		
Nurses	219	**43.8%**
Physicians	281	**65.2%**
Education Level		
Highschool	36	**7.2%**
Diploma	139	**27.8%**
Bachelors	247	**49.4%**
Master	26	**5.2%**
PhD	31	**6.2%**
Other	21	**4.2%**
Experience (Years)		
0 -10	346	**69.2%**
11- 20	101	**20.2%**
21-30	47	**9.4%**

>30	6	**1.2%**

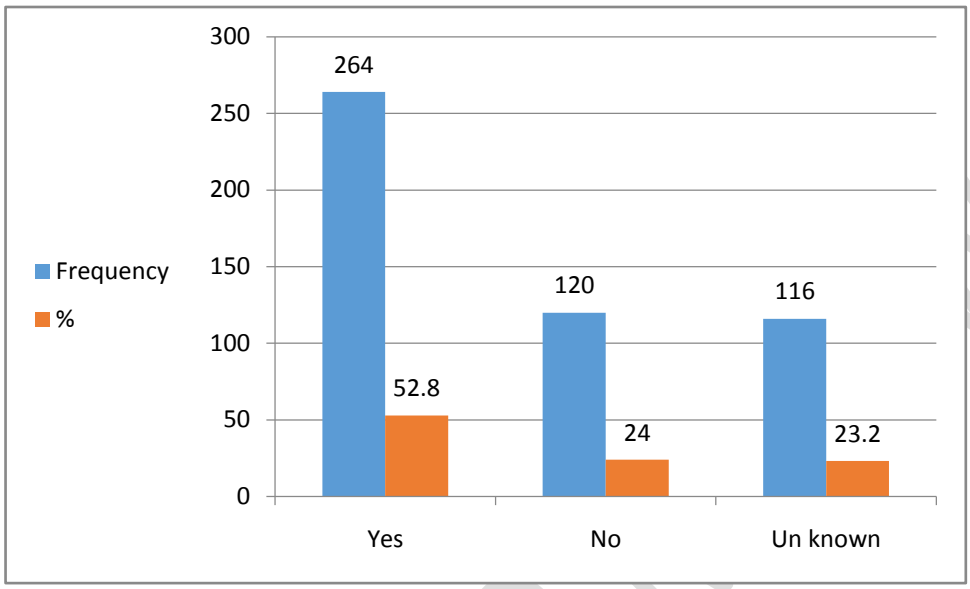

Figure 1: System of Reporting Medical Errors

Figure (1) shows the participant's opinions regarding the current system for reporting medical errors at Benghazi Medical Centre (BMC).

The figure indicated that most of the participants stated that they have a reporting system for medical errors, representing 52.8% as compared to only 24% claiming that they don't have an error-reporting system, while the rest don't know.

Table (2) presents the measuring of the barriers that prevent nurses from reporting medical errors. It can be seen that the participants vary in responding to the barriers that prevent reporting medical errors with the mean range from μ=3.47, stating " Medical reports are insufficient "to μ=2.29, stating "the reporting of medical errors was unimportant" which was the lowest mean. This statistical ranking could provide us with an initial list of barriers to treatment.

Table2:Measuringthebarriersthatpreventthereportingofmedicalerrors among Nurses

DescriptiveStatistics			
	N	Mean	Std.Deviation
Fearofbeingblamed	219	2.8904	1.45793
Fearofbeingpunished.	219	2.7443	1.43303
Difficultyinfillingout theform.	219	2.9954	1.43513
Lackofknowledgeofwhatweshouldreport.	219	3.1370	1.37456
Medicalerrorreportingis inadequate.	219	3.4749	1.39233
Lackof proceduresfor reportingmedicalerrors.	219	3.2648	1.44730
Complexityofwork.	219	3.3059	1.41503
Medicalerrorinsuranceleads todecreased medicalerrorreporting.	219	3.3059	1.42794
Lackoftime.	219	2.3151	1.22897
Somemedicalerrorsaretrivialtoreport.	219	2.2922	1.31557
Reportingerrorsisn'tmyresponsibility.	219	2.5160	1.35575
Reportingerrorswillnotmakeany improvement.	219	2.9589	1.47864
Reportingerrorsisnotapriority.	219	2.3699	1.30110

Table (3) also presents the measuring of the barriers that prevent physicians from reporting medical errors. “It can be seen that the participants vary in responding to the barriers that prevent reporting the medical errors with the mean range from μ=3.62, stating " Medical reports are insufficient "to μ=2.028, stating "the reporting of medical errors was unimportant" which was the lowest mean. This statistical ranking could provide us with an initial list of barriers to treatment”. [16]

Table3:Measuringthebarriersthatpreventthereportingofmedicalerrors among Physicians

	N	Mean	Std.Deviation
Fearofbeingblamed	281	3.0961	1.50524
Fearofbeingpunished.	281	3.0107	1.48200
Difficultyinfillingout theform.	281	2.9181	1.32438
Lackofknowledgeofwhatwesh ould report.	281	3.1459	1.35359
Medicalerrorreportingis inadequate.	281	3.6263	1.23312
Lackof proceduresfor reportingmedicalerrors.	281	3.5160	1.35248
Complexityofwork.	281	3.5231	1.30124
Medicalerrorinsuranceleads todecreased medicalerrorreporting.	281	3.1922	1.36228
Lackoftime.	281	2.1744	1.12830
Somemedicalerrorsaretrivialtoreport.	281	2.0285	1.10481
Reportingerrorsisn'tmyresponsibility.	281	2.3452	1.29768
Reportingerrorswillnotmakeany improvement.	281	2.9075	1.46579
Reportingerrorsisnotapriority.	281	2.0427	1.12041

To move to the second issue which is the possible strategies that might help to improve reporting MEs, it can see from Table(4) that the participants agreed to the idea of the proposed strategies taking the mean range from μ= 4.566 for " thereshouldbeclearevidenceandproceduresformedicalerrors",to μ= 2.365 for "Errorreportingshouldnotbeusedagainstthenurseor doctor",indicating the possibility of using such proposed strategies on the way to improving the reporting of the medical errors.

Table4:MeasuringStrategiesforImprovingReportingofMedicalErrors among Nurses

DescriptiveStatistics			
	N	Mean	Std.Deviation
Thereshouldbeclear guidelinesandprocedur esfor reportingerrors.	219	4.5662	.78923
Formsandother documentationshouldbe clear.	219	4.4201	.79376
Staffshouldbetraine dinreportingmedical errors.	219	4.4612	.72447
Staffshouldalwaysbe encouragedtoreportme dicalerrors.	219	4.4658	.79705
Reportingerrorsshoul dbemandatory.	219	4.2968	.99933
Staffshouldalwaysbe providedbyfeedbackon what hasbeenreported.	219	4.4475	.71724
Usea computerizedsystem ; and/or.	219	3.9452	1.11976
Reportingerrorsshould n'tbeusedagainstreport ers.	219	2.3653	1.37603

Table5 also displays measuringstrategiesforimprovingthe reportingofmedicalerrors among physicians.The participants agreed to the idea of the proposed strategies taking the mean range from μ= 4.779 for " thereshouldbeclearevidenceandproceduresformedicalerrors",to μ= 2.359 for "Errorreportingshouldnotbeusedagainstthenurseor doctor", also demonstrating the possibility of using such proposed strategies on the way to improving the reporting of the medical errors.

Table5:MeasuringStrategiesforImprovingReportingofMedicalErrors among Physicians

DescriptiveStatistics			
	N	Mean	Std.Deviation
Thereshouldbeclear guidelinesandproceduresfor reportingerrors.	281	4.7794	.49396
Formsandother documentationshouldbe clear.	281	4.7402	.53464
Staffshouldbetrainedinreporti ngmedicalerrors.	281	4.6904	.60964
Staffshouldalwaysbe encouragedtoreport medicalerrors.	281	4.6726	.65432
Reportingerrorsshouldbeman datory.	281	4.5018	.75652
Staffshouldalwaysbe providedbyfeedbackonwhat hasbeenreported.	281	4.5730	.68336
Usea computerizedsystem; and/or.	281	4.1957	.98965
Reportingerrorsshouldn't beusedagainstreports	281	2.3594	1.47200

4. Discussion

The present study aimed to attempt to assessthe barriers and strategies for reporting MEs in BMC, Benghazi, Libya
duringAugust to October 2021. The study found that women made up the majority of the study population, Which was in line with the findings from a previous study conducted in Kuwait in 2019 [8] that found that females represented 58.6%. They may be capable of paying close when filling out reporting forms and more conscious of raising and elevating the level of reporting. In addition, the majority of the study population had a bachelor's degree which was similar to the findings of the previous studies[6][8][10], indicating that bachelor's degrees were the most demanded in the healthcare setting. The study participants had experience of up to 10 years with the highest aged group ranging from 31-40 years. These findings were agreed with evidence in Negar (2015), where 69.2% of the participants had experience up to 10 years [3]. In Riyadh City (2014), the presents 57.6% of work experience up to 9 years.

"The current results indicated that most of the participants stated that they have a reporting system for medical errors, which was similar to a piece of evidence in Saudi Arabia, representing
55% as compared to only 28.5% claiming that they don't have an error-reporting system" [10]. It reflects that there was awareness regarding the importance of reporting medical errors at work.

This study found thatLibyansaremorepatriotic, fearful, andcaring, whichwillhelpto enhance the reporting system and lower medical errors. It also found that there were significant differences between the percent distribution of physiciansand nurses, they were 65.2% and 43.8% respectively. It additionally found that the physicians were the individuals committing the errors at the BMC, which can increase the likelihood of them reporting medical errors higher than others.

"The most common barriers preventing the staff from reporting the MEs were: medical error reporting is inadequate, Medicalerrorinsuranceleading to a decreasein medicalerrorreporting, lack of procedures for reporting medical errors, and complexity of work. This outcome disagreed with the outcome of the survey conducted in Riyadh in 2014, where the target group reported: fear of being blamed, fear of being punished, difficulty in filling the form, lack of knowledge of what should be reported, and then medical errors reporting are inadequate, lack procedures on reporting medical errors"[10]. These differences may relate to the lack of an organizational structure and procedures based on a clear management system.

"Several pieces of evidence define the barriers and strategies of reporting MEs. Such a study in Gaza where it is shown that the factors affecting ME reporting by physicians and nurses were organizational barriers (59.2%), barriers due to fear (72.4%), and cultural barriers (73.1%), respectively. The first causes preventing medical error reporting by physicians and nurses were staff worry (76.9%) followed by fear of lawsuits (legal and financial penalties) (75.3%), the fear of questioning competence (74.2%), work pressures (68.6%) and finally insufficient staff number (67.9%)" [6].

"Another study in Iran where stated that the most common barriers preventing reporting the MEs include: fear of legal action and job threats, fear of economic losses, fear of honor and dignity, weakness of knowledge, and weakness of nursing skills in error management" [12].

Likewise, a study in Taiwan where displayed that the most common factors preventing reporting of the MEswere: no positive feedback for giving medication correctly and fear was considered a major barrier [15].

Moreover, the outcome of the current study was highly reported as "sound and clear procedures", which were similar to the outcomes of the Riyadh study(2014) that presents a higher mean(4.68) [10]. This suggests that There should be clear guidelines and procedures for reporting errors but these strategies need to be modified to provide high-quality, effective programs and benefit to the group who reports medical errors.

Studies have also revealed that the causes of MEs involved a lack of job training and experience [10][12][14]. It was similar to the current study where the participants highly reported " Staffshouldbetrainedonreportingmedicalerrors".

5. Conclusion

It is concluded that the highest measuring the barriers that prevent the reporting of medical errors was the complexity of the work, while the highest measure in the strategy to improve the reporting system was the necessity of having clear controls and procedures for reporting medical errors. Thus, there is an essential need to develop an effective system or protocol for reporting medical errors in hospitals. Further research should be conducted to improve the strategies for reporting medical errors. Overall, changing the knowledge regarding medical error reporting can support physicians and nurses in reporting medical errors and avoid repeating them.

ETHICAL APPROVAL:

Ethical approval was obtained from the Ethics Committee of the Faculty of Public Health.

Consent

As per international standards or university standards, respondents' written consent has been collected and preserved by the author(s).

AUTHORS' CONTRIBUTIONS

'AUTHORS 1' DESIGNED THE STUDY, PERFORMED THE STATISTICAL ANALYSIS AND WROTE THE FIRST DRAFT OF THE MANUSCRIPT. 'AUTHOR 2' REVISE, EDITED AND ORGANIZED THE STUDY AND WRITE THE FINAL DRAFT OF THE MANUSCRIPT. ALL AUTHORS READ AND APPROVED THE FINAL MANUSCRIPT.

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Competing interests

The authors declare that they have no competing interests.

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