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 ~~For of~~Reporting Medical Errors (MEs) atBenghazi Medical Center (BMC).
Methods: A cross sectional study was conducted using a validated questionnaire with some change, fromAugust to October 2021 in Benghazi Medical Center.The number of sample was 500, where 280 doctors and nurses 220, 142 of them were male and 359 were female.
Results: 219 of nurses and 281 of 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 errors reporting are inadequate. Whilemeasuring Strategies for Improving Reporting of medical errors was 4.5662 for nurses , and 4.7794 for Physicians, which representsThere should be clearguidelines and procedures to 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.

Comment [hakem1]: How the research data were analyzed should be added to the method section of the summary.

Keywords: *Reportingmedical errors,Reporting Medical ErrorsBarriers , strategy improving reporting medical errors.*

Comment [reviewer2]: keywords should be rearranged according to Mesh.

1-INTRODUCTION

Hospitals are among the most crucial settings for the delivery of healthcare services and the practice of medicine, and they typically expand In order 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 is a significant public health issue that could endanger patient safety [2]. At the moment,eliminating medical errors is a global problem [3]. It is a breach of the care protocol that might or might not have consequences [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 wellbeing 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 a number of strategies that healthcare organizations might employ to stop potential MEs in service delivery in the future [8].

Medical errors (MEs) definition 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 the course of treatment [9]. Management of medical 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]. Indicated in the preceding sentence, nurses noted that one of the probable reasons of medical errors is having obligations unrelated to their employment [10] .

The Barriers definitions as Fear ofbeing blamed for the error is by far the most reported fear, providers reportedfear of losing one' s job, fear ofpatient' s or family' s response to theME, fear ofbeing 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 busywork 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 as a step managers take to fulfill one or more of the objectives ofthe company .A 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.
It outlines an organization's overall goal, vision, and course. The goal of a strategy is to maximize an organization's strengths and reduce competition strengths. [13].

Comment [reviewer3]: In order to emphasize the importance of medical errors in the introduction, studies on medical errors in the country where the research was conducted and internationally can be included. Medical error percentages can be added.

2. METHODS

2.1 Study Setting

Comment [reviewer4]: This title is unnecessary, it can be added to the design section.

The study was conducted at Benghazi Medical Center (BMC) in Benghazi City , Libya

2.2 Study Design

This study was designed as a cross- sectional study.

2.3 Study Population

The study population comprised from all physicians and nursing in department's at Benghazi Medical Center during the period between (August to October /2021), where the number of sample was 500, 280 of them were physicians , and 220 were nurses .

Comment [reviewer5]: Information about how the sample selection was made in the research was not included.

2.4 Sample Collection

The data collection tool was the questionnaire , this questionnaire was developed through literature review [10] , the questionnaire was included three section :
Section one: It was consisted of questions about social demographic data of doctorsand nursing (age, gender, education level, occupation , nationality, years of experience, system for reporting medical errors.
Section two: Included “13" items to barriers preventing reporting medicalerrors.
Section three:Included “8” items to strategies improving reportingmedical errors.

Comment [reviewer6]: Was the scale you used a ready-made scale? If so, who developed it? How many items did it have in total? Did it have sub-dimensions? How were the scale scores interpreted? What was the Cronbach alpha value of the scale, what did you find? Answers to these questions should be added.

2.5 Statistical Analysis

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

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3. RESULTS

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

Comment [reviewer7]: No comments should be made in the findings section. What the finding actually is should be given directly numerically. Expressions such as high, low are comments.

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%**

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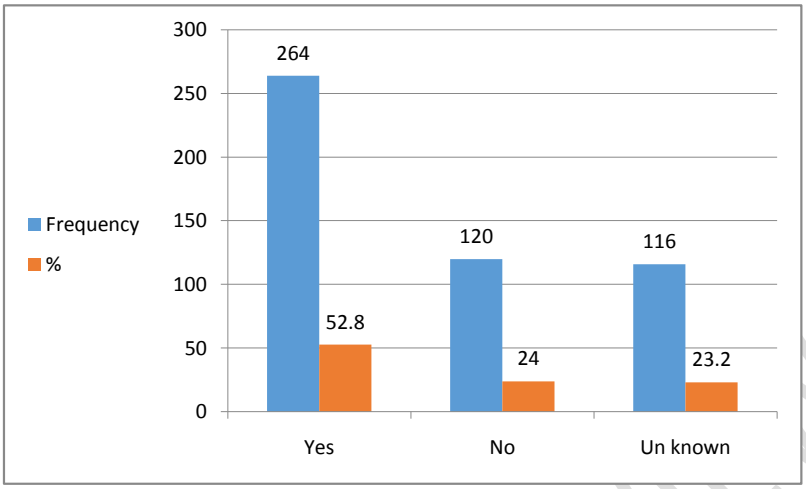

Figure 1: System of Reporting Medical Errors

Figure (1) shows the participants 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.

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

Table2:Measuringthebarriersthatpreventthereportingofmedicalerrors (Nurses)

DescriptiveStatistics[a]			
	N	Mean	Std.Deviation
Fearofbeingblamed	219	2.8904	1.45793
Fearofbeingpunished.	219	2.7443	1.43303
Difficultyinfillingtheform.	219	2.9954	1.43513
Lackofknowledgeofwhatweshouldreport.	219	3.1370	1.37456
Medicalerrorsreportingareinadequate.	219	3.4749	1.39233
Lackproceduresonreportingmedicalerrors.	219	3.2648	1.44730
Complexityofwork.	219	3.3059	1.41503
Medicalerrorsinsuranceleadtodecreasemedicalerrorsreporting.	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
ValidN(list wise)	219		

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

Table3:Measuringthebarriersthatpreventthereportingofmedicalerrors (Physicians)

	N	Mean	Std.Deviation
Fearofbeingblamed	281	3.0961	1.50524
Fearofbeingpunished.	281	3.0107	1.48200
Difficultyinfillingtheform.	281	2.9181	1.32438
Lackofknowledgeofwhatweshould report.	281	3.1459	1.35359
Medicalerrorsreportingareinadequate.	281	3.6263	1.23312
Lackproceduresonreportingmedicalerrors.	281	3.5160	1.35248
Complexityofwork.	281	3.5231	1.30124
Medicalerrorsinsuranceleadtodecreasemedicalerrorsreporting.	281	3.1922	1.36228
Lackoftime.	281	2.1744	1.12830
Somemedicalerrorsaretrivialtoreport.	281	2.0285	1.10481
Reportingerrorsisn'tmyresponsibility.	281	2.3452	1.29768
Reportingerrorswillnotmakeanyimprovement.	281	2.9075	1.46579
Reportingerrorsisnotapriority.	281	2.0427	1.12041
ValidN(list wise)	281		

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To move to the second issue which is the possible strategies that might help improving reporting MEs, it can see from Table(4) that the participants agreed to the idea of the proposed strategies take 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 (Nurses)

Comment [reviewer8]: Tables should be arranged offset, and two digits after the comma are sufficient.

DescriptiveStatistics[a]			
	N	Mean	Std.Deviation
Thereshouldbeclear guidelinesandprocedurestoreportingerrors.	219	4.5662	.78923
Formsandother documentationshouldbeclear.	219	4.4201	.79376
Staffshouldbetrainedonreportingmedicalerrors.	219	4.4612	.72447
Staffshouldalwaysbe encouragedtoreportmedicalerrors.	219	4.4658	.79705
Reportingerrorsshouldbemandatory.	219	4.2968	.99933
Staffshouldalwaysbe providedbyfeedbackonwhat hasbeenreported.	219	4.4475	.71724
Usecomputerizedsystem; and/or.	219	3.9452	1.11976
Reportingerrorsshouldn'tbeusedagainstreporters.	219	2.3653	1.37603
ValidN(list wise)	219		

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Table5 also displays measuringstrategiesforimprovingreportingofmedicalerrors among physicians.The participants agreed to the idea of the proposed strategies take 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 (Physicians)

DescriptiveStatistics[a]			
	N	Mean	Std.Deviation
Thereshouldbeclear guidelinesandprocedurestore portingerrors.	281	4.7794	.49396
Formsandother documentationshouldbe clear.	281	4.7402	.53464
Staffshouldbetrainedonreport ingmedicalerrors.	281	4.6904	.60964
Staffshouldalwaysbe encouragedtoreport medicalerrors.	281	4.6726	.65432
Reportingerrorsshouldbeman datory.	281	4.5018	.75652
Staffshouldalwaysbe providedbyfeedbackonwhat hasbeenreported.	281	4.5730	.68336
Usecomputerizedsystem; and/or.	281	4.1957	.98965
Reportingerrorsshouldn't beusedagainstreports	281	2.3594	1.47200
ValidN(list wise)	281		

Comment [reviewer9]: In addition, a table comparing the descriptive characteristics of the participants and the data on medical errors can be added to make it more eye-catching.

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4. Discussion

The present study aimed attempting to assessthe barriers and strategies for reporting MEs in BMC, Benghazi, Libya
duringthemonthof August to October 2021. The study found that the women made up the majority of the study population, Which was in line with the findings from previous study was conducted in Kuwait 2019 [8] that found the females represented 58.6%. It clears that they may 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], indicates the bachelor degrees were the most demand in the healthcare setting. The study participants had experience up to 10 years with highest aged group ranged from 31-40 years. These findings were agreed with an 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% for 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 an evidence in Saudi Arabia, representing 55% as compared to only 28.5% claiming that they don't have an error-reporting system [10]. It reflect of there were awareness regarding the importance of reporting medical errors at work.

In this study, it 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 individual committing the errors at the BMC, which can increase the likelihood of them to reporting medical errors higher than others.

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The most common barriers preventing the staff from reporting the MEs were: medical errors reporting are inadequate, Medicalerrorsinsuranceleadtodecreasemedicalerrorsreporting, lack procedures on reporting medical errors, complexity of work. Theses outcome disagreed with the outcome of the survey conducted in Riyadh in 2014, where the target group have 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 difference may relate to the lack of an organizational structure and procedures based on clear management system.

Actually, there are several evidence which defined the barriers and strategies of reporting MEs. Such a study in Gaza where it shown that the factors affecting ME reporting by physicians and nurses were organizational barriers (59.2%), barriers due to fear (72.4%), 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 a study in Iran where it stated that the most common barriers preventing reporting the MEs contain: 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 itdisplayed that the most common factors preventing reporting of the MEswere: no positive feedback for giving medication correctly and fear was considered as a major barrier [15].

Moreover, the outcome of the current study were highly reported "sound and clear procedures", which were similar to the outcomes of the Riyadh study(2014) that presents the higher mean(4.68) [16]. This suggests that There should be clear guidelines and procedures to reporting errors but these strategies needs to be modified in order to provide high quality, effective program and benefit to the group who reports medical errors.

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

5. Conclusion

To be 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 researches should be conducted in purpose of improving the strategies of reporting medical errors. Overall, change the knowledge regard medical errors reporting can support physicians and nurses to reporting the medical errors and avoid repeated again.

ETHICAL APPROVAL:

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

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