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Medical Errors in Terms of Cause, Departments in which they Occur, and Solutions from the Point of View of Doctors in Benghazi Medical Center

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Abstract

Medical errors primarily negatively affect patients, medical service providers, as well as health organizations in terms of quality. The prime purpose of this study was to develop an understanding of medical errors in terms of causes, departments with the highest incidence of them, the most to blame for their occurring, and strategies to prevent medical errors from occurrence from the perspective of doctors in Benghazi Medical Centre. A cross-sectional design was chosen to conduct this study, and data was collected from doctors working at Benghazi Medical Center. 281 samples were selected at random. The Epi Info tool calculated the sample size with a 95% confidence interval, and the response rate was 100%. The instrument of data collection was a self-administration questionnaire. (SPSS version 22) was used to analyze the collected data. The results show that the most common errors occurred in the emergency room (66.9%). In addition, it has been found that one of the most critical factors that contribute to the occurrence of medical errors was the lack of necessary resources for some tasks (566%). 45.6% of doctors blamed the administration and (57.7%) suggested that seminars and workshops were the best solution to solve the medical errors issue. Results show that a lack of required resources was generally the main reason for medical errors. In addition, the emergency room is a typical location for medical errors to take place. Through workshops and seminars, doctors determined the best way to stop medical errors. Additionally, the study participants attributed the occurrence of medical errors to the administration in their respective departments.

Keywords: Medical Errors, Doctors, Benghazi Medical Center, Cross Section Study.

INTRODUCTION

Patient safety can generally be improved by recognizing the unfavorable events that transpired, drawing lessons from them, and implementing preventative actions(Rodziewicz et al., 2022). Improving patient safety requires the healthcare system to be able to provide timely, efficient, patient-centered, safe, effective, and equitable care (MacGillivray, 2020). Globally, medical errors are the primary cause of death and a significant public health issue. The patient is the first casualty of medical errors. Prior research indicates that medical errors exacerbate patients' initial problems, which they require medical attention for (Liederbach et al., 2001). Notable consequences of incidences of medical errors, such as post-traumatic stress disorder, prolonged

hospital stays, and extreme circumstances, can result in persistent quality of life changes or even death (Ottosen et al., 2018; Tevlin et al., 2013). The second victim is the doctors. Surveys such as that conducted by Waterman et al. with a large sample size of 3,171 physicians have shown that doctors reported feeling more anxious (61%), losing confidence (44%), having trouble sleeping (42%), being less satisfied with their jobs (42%), and having their reputations harmed (13%) as a result of medical errors(Waterman et al., 2007).

The most common types of medical errors were those related to hospital infection rates, diagnostic errors, injuries from needles or cutting devices, and problems from the use of drugs that cause side effects (Alduais et al., 2014). Significant variations were found in the etiology of medical errors in earlier research. Age extremes, novel procedures, inexperienced physicians and nurses, and complex or emergency care are the most likely causes of medical errors (Weingart et al., 2000). Several things are known to make the problem worse, including poor communication, insufficient documentation, poor handwriting, spelling errors, low nurse-to-patient ratios, and medications with similar names (Hannawa, 2018). However, other studies showed that the acts or inactions of the patient may also have a substantial impact on medical mistakes(Hannawa et al., 2017; Seisser, 2003). The classification and identification of errors must be made obvious in order to reduce medical errors. However, it is a challenging task that may be made simpler by creating a strong classification system. Every year, dangerous medical practices affect millions of patients globally, resulting in 2.6 million fatalities just in low- and middle-income nations (Rodziewicz et al., 2022). The study aimed to shine new light on medical errors in Benghazi Medical Center BMC, Benghazi City.

MATERIALS AND METHODS

Study type:
The study design was a cross-sectional study.

The subjects of this study:
doctors who were working at Benghazi Medical Center during the study period. There were 281 random samples chosen. The number of samples was computed by the Epi Info program, with a 95 percent confidence interval, and the response rate was 100%. Doctors were chosen as subjects for the study because they are presumed to be the second victims of medical errors (Plews-Ogan et al., 2016).

Study setting:
The Benghazi Medical Center, a public hospital in Benghazi, was chosen at random from among the city's other public hospitals as the site of the study. Data used in this study were obtained from a self-administered questionnaire. The questionnaire was adopted from a previous study and utilized to investigate the issue of medical errors (Ahmed et al., 2019). The questionnaire was composed of three sections: Section one: gathering demographic information about the participants (age, gender, qualifications, profession, departments they worked in (emergency, general, cardiology, radiology, (ear, nose, and throat (ENT)), blood, oncology, the central care unit and operations), and years of experience. Section two: was about the participants' knowledge about medical errors and the questions of whether they had seen or been part of the medical errors. The third section, the last of which were suggestions to avoid and reduce these problems.

Ethical considerations:
Names or other personal identifiers were not recorded anywhere in the researcher's data. The

data collection timeframe was approximately two weeks. Data management and analysis were performed using (SPSS22)

Statistical tests:
Frequencies and percentages were the statistical tests used in this study.

RESULTS

According to demographic data, the majority of respondents were female, with a percentage of 60.34%, while the percentage of males was 39.9%, as shown in Table 1. In addition, more than half of the respondents ranged in age between 30 and 39 years (52.7%), followed by those who were in the age groups of 25–29 years (23.1%), 40–49 years old (13.9%), 59–50 years old (5.3%), and less than 25 years old (5.0%), respectively. As shown in Table (1), the results show that for the years of experience variable, the percentage of the highest years of experience was more than 10, and its percentage was 33.5%, followed by experience from 5 to 10 was (19.6%), then two years the percentage was (17.8%), from 3 to 5 years was (15.3%), and a year or less was (13.9%). As shown in Table 1, the results show that for the years of experience variable, the percentage of the highest years of experience was from 5 to 10 years, and its percentage was 33.5%, followed by experience of more than 10 years at 19.6%, then two years at 17.8%, from 3 to 5 years at 15.3%, and a year or less at 13.9%. In terms of educational qualification, 39.5% held a bachelor's degree, followed by doctorates (27.5%), masters (16.4%), diplomas (13.2%), and other qualifications (3.9%).

Table (1): Demographics and characteristics of participants included in the study (n = 281)

Characteristic	Variables	Number. (%)
Gender	Male	112 (39.9)
	Female	169 (60.1)
(Age group)	25<	(5.0) 14
	25-29	(23.1) 65
	30-39	(52.7) 148
	40-49	(13.9) 39
	50-59	(5.3) 15
Level of education	Bachelor's degree	(39.5) 111
	Masters	(16.4) 46
	Doctorate	(27.0) 76
	Diploma	(13.2) 37
	Other	(3.9) 11
(Years of experience)	One year or less	(13.9) 39
	Two years	(17.8) 50
	Years 3-5	(15.3) 43
	Years 5-10	55 (19.6)
	More than 10 years	(33.5) 94

Approximately more than half of the participants indicated that the most common place for medical errors to occur was in the emergency room. There were responses to this question (30.6) where it was the operating room. The intensive care unit (29.2%) came in third place. Just a small number of participants answered (the wards), who totaled 16 doctors (Table 2).

Table (2): The most common places where medical errors occur.

Valid	Frequency (yes) answered	Percentage %
Emergency room	188	66.9
Operation room	86	30.6
Intensive care unit	29.2	29.2
The wards	45	16.0

Table 3 presents the most common causes behind the medical errors in BMC. Just over half of the participants answered the lack of necessary resources for some tasks (56.6%), followed by the failure of the communication system. Few participants (6.0) indicated that (Failure to comply with set policies) was the most common cause of medical error. The experience and satisfaction of participants are shown in Table 4. Table 5 shows that participants blamed more administrators in their departments, and 128 of those who participated indicated that.

Table 6 demonstrates that the best solutions, from the point of view of doctors, were seminars and workshops. A little over half indicated that this is the best solution (57.7). Only a small number of respondents indicated that the best solutions were the reporting and analysis of problems (76, 73), respectively.

Table (3). The most common cause of medical errors

Valid	Frequency (yes) answers	Percentage %
The lack of necessary resources for some tasks	159	56.6
Failure of the communication system	68	24.2
Human error	64	22.8
Patients with poor collaboration	24	8.5

Table (4). The experience and satisfaction of participates.

Valid	Frequency (yes) answers	Percentage %
Does a doctor's inexperience lead to more medical mistakes?	247	87.9
Are you satisfied with your position at the hospital?	167	59.4

Table (5). The one who is most to blame for mistakes in your department.

Valid	Frequency (yes) answers	Percentage %
Administration	128	45.6
Fellow staff	44	15.7
Patients	34	12.1
The System running the facility	101	35.9
Other departments	33	11.7

Table (6). The best solution to the problem of medical errors.

Valid	Frequency (yes) answers	Percentage %
Educating healthcare professionals about medical responsibility through seminars and workshops	162	57.7
Encourage health sector workers and auditors to report medical mistakes	76	27.0
Addressing medical errors by conducting an investigation to determine the root of the issue and creating a mechanism to prevent this error from happening again.	73	26.0
Creating a climate at work where employees in the health industry can work fewer hours, rethink the shift structure, and consider fewer patients being admitted to the hospital.	50	17.8

DISCUSSION

The majority of the sample had more than ten years of experience. This detail suggested that the experiences of the individuals were diverse. The opinions expressed in this survey were representative of the entire sample, as evidenced by the 100% sample response rate. The majority of sample respondents—more than half—agreed that emergency rooms were the primary setting where medical errors were frequently observed. Previous research conducted in Kuwait and Saudi Arabia (Ahmed et al., 2019; AlJarallah & AlRowaiss, 2013) placed the operating room higher than the emergency room, which contradicted the results of our study. Usually, there are reasons for the occurrence of errors in the emergency department, the most important of which was the high workload in Benghazi Medical Center, as the health system has been suffering from poor application of the referral system for years and an unstable system of triage. All emergency cases are received in just two hospitals in Benghazi, including the Benghazi Medical Center. Also, working in the emergency room requires high degrees of cooperation and effective communication. The participants in the study indicated that the second reason for the occurrence of errors is poor communication. Studies indicate that one of the causes of errors in the emergency room was ineffective communication (Eisenberg et al., 2005; Zimmer et al., 2021).

The study's participants also indicated that the causes of medical errors were due to a lack of necessary supplies, which is an obvious explanation for why this would have occurred in the emergency department. The results of several other authors are consistent with this intriguing link between medical errors and a scarcity of resources in the emergency room. High decision density and resource constraints are associated with a high occurrence of preventable medical errors in the emergency department (Asadi et al., 2018; Rowland & Adefuye, 2022).

The majority of participants revealed the most common cause of medical errors to be a lack of resources for some tasks and a shortage of equipment. The World Health Organization underlines that in order to prevent, diagnose, treat, and cure diseases safely and effectively, medical devices are a crucial part of health systems (W.H.O, 2022) Libya’s health system has a 50% availability rate for basic equipment, according to the Service Availability and Readiness Assessment (SARA) (Cakmak et al., 2017). Without the best medical equipment, it is impossible for doctors to practice their profession. Medical practitioners require the best equipment available today in order to perform effectively and efficiently while carrying out their jobs. The current study supports previous research on the point that the lack of essential equipment causes medical errors (Maphumulo & Bhengu, 2019; Moyimane et al., 2017). In addition, according to the findings of this study, the second major cause of medical errors was poor communication. In

many studies, miscommunication was the first reason for medical errors (Alsaleh et al., 2021).

The result of this study indicates that inexperience increases medical errors among doctors. The result is in line with earlier literature (Abd Elwahab & Doherty, 2014) that found junior physicians were particularly at risk for mistakes and their detrimental effects. Results from this study showed that slightly less than half of the doctors participating in the study felt job dissatisfaction. It seems possible that lack of satisfaction is one of the reasons behind medical errors. According to a study done in Taiwan, patient safety practices are directly and substantially correlated with healthcare workers' job satisfaction (Al-Surimi et al., 2022).

Doctors put the primary blame on management in their departments for medical errors. This result is compatible with a study conducted in Egypt and another in Australia. This result is completely different from the study of Kuwait (Ahmed et al., 2019), and this may be due to the size of the hospital and the high workload for the Benghazi Medical Hospital, as the hospital is among the hospitals with 1200 beds. On the contrary, Kuwait Hospital, considered a tertiary hospital, is somewhat smaller. There may be a connection between hospital size and management inaccuracies but there is no clear link. Larger hospitals usually have more complicated organizational structures, greater number of patients, and more healthcare workers, which raises the risk of management errors. These errors can be caused by issues like poor communication, coordination problems, and challenges with applying standardized protocols and processes throughout a big organization.

Based on the results, the opinions of the doctors participating in the study regarding the role of the institutions in reducing medical errors were that they should conduct workshops. When an adverse event happens, all members of the healthcare team must ensure efficient interprofessional communication, identify and report a medical error as soon as it is discovered, and offer prompt assistance to their colleagues. All these activities require effective training, especially for new graduates, to avoid making mistakes, as indicated by the results of this study.

CONCLUSION

Therefore, in general, it seems that the most common cause of medical errors at Benghazi Medical Center was a lack of necessary resources. In addition, the department where the most medical errors occurred was the emergency room. The doctors find that the best solution to prevent medical errors is by conducting workshops and seminars. Furthermore, the participants in the study blamed the administration in their departments for the occurrence of medical errors.

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