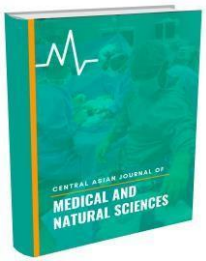

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Article

Common Practical Errors among Family Physicians and Contributing Factors in Iraq

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Abstract: Medical errors are a critical concern in family practice, with significant implications for patient safety. Understanding the common practical errors and their causes is essential for improving healthcare quality. This study aims to investigate the common practical errors among family doctors and the contributing factors. A cross-sectional study was conducted among 400 family doctors who work at primary health care centers in Iraq between 2nd of January 2024 to 1st of July 2024. Data were collected using a structured questionnaire, including sections on demographic information, frequency of errors such as (misdiagnosis, prescription errors and documentation errors), and contributing factors such as (workload and time pressure, fatigue and sleep deprivation and lack of proper training or education). Responses were analyzed using SPSS version 26. The most common errors identified were related to documentation errors (25.3%). Factors contributing to these errors included workload (89.3%), sleep deprivation (80%), burnout (77%), and organizational culture (77.3%). Frequency were found between misdiagnosis and high workloads, sleep deprivation, training, communication skills, technology, and personal stress. We also found frequency between prescription errors and high workloads, sleep deprivation, training, communication skills, and technology. We also found frequency between poor hand hygiene with training, communication, technology, personal stress, and an organizational culture that prioritizes efficiency over safety. Frequent medical errors were noted in primary care among family physician in Iraq. The most common errors identified were related to documentation errors. The study highlighted how factors like workload, fatigue and sleep deprivation ,burnout, and organization culture affect patient care, by identifying common causes of errors made by family physicians.

Keywords: : Family Doctors, Medical Errors, Cross-Sectional Study

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1. Introduction

Background

Primary care provides patients with personalized and comprehensive care tailored to their specific needs and preferences. This strategy includes a wide range of services, such as preventative care, acute and chronic disease treatment, and care coordination with specialists [1]. The primary care practitioner takes the time to learn each patient's specific health objectives and concerns and works with them to create a personalized care plan that meets their specific requirements [2]. This patient-centered strategy promotes strong doctor-patient connections and improves long-term health outcomes [2].

Every community receives treatment differently based on the requirements of its citizens, the accessibility of medical professionals, and its geographic location [3]. Healthcare-related harm is a significant contributor to illness and mortality. Patient harm

is defined by healthcare organizations as any incident that causes harm to patients, including impairment of bodily functions or structures, as well as any negative consequences resulting from planned healthcare actions [4]. This includes harm caused by underlying medical conditions or injuries. To reduce this harm, physicians work to reduce the errors leading to it [5].

Following the publication of the Institute of Medicine's (IOM) report "To Err is Human" in 1990, healthcare providers began to express concern about reducing medical errors [6]. As per the report "To Err is Human," an error takes place when a planned action deviates from the anticipated course (referred to as an error of execution), or when an incorrect plan is employed to achieve a goal (referred to as an error of planning). Errors of commission, which involve inadvertently carrying out the incorrect action, and errors of omission, which involve inadvertently neglecting the correct action, are the two classifications of execution errors [7]. Medical errors in hospitals have been extensively researched, but many of the insights gained from this research are not directly applicable to primary care settings [8]. In a healthcare environment, it is the responsibility of healthcare professionals to remain attentive to, report, and enhance patient safety through the provision of clearer delineations of medical errors. According to estimates from the Institute of Medicine, medical errors contribute to an annual range of 44,000 to 98,000 fatalities. Heightened reporting rates facilitate the identification of underlying error causes and the formulation of procedures capable of substantially reducing future error frequencies [4]. As per a recent report from the Institute of Medicine, it has been highlighted that there exists a substantial void in the improvement of patient safety that is yet to be completely addressed [9].

Doctors and healthcare systems need to prioritize the eradication of common medical errors to safeguard patients and themselves, as well as to improve the overall quality of care while reducing costs. One of the primary contributors to medical errors is breakdowns in communication, whether verbal or written, poor communication between patients and doctors can also lead to errors [4].

Additionally, inadequate patient follow-up can result in a lack of essential information flow, particularly when crucial data and test results are needed to make informed decisions [10]. Errors in patient medication orders during transfers and insufficient patient identification assessments also contribute to medical errors. Lack of consent and inadequate levels of knowledge further compound these issues. Another concern relates to the organization responsible for imparting knowledge to healthcare providers, citing insufficient training. Technical failure can also encompass issues or malfunctions involving medical equipment and devices caused by inadequate training or a shortage of supplies [11].

Justification

Patients in primary care settings are susceptible to certain types of errors that could lead to serious harm. Giving consideration to the systemic factors contributing to these errors can enhance the safety of primary care [12]. However, there has been relatively limited research on this topic, which makes it challenging to comprehend the nature and prevalence of these errors. Furthermore, there is a dearth of knowledge regarding basic care errors. A growing body of research has focused on medical errors made by trainee doctors in the UK and the USA. However, there is a paucity of studies examining the effects of these errors on the careers of Iraqi doctors. Furthermore, research on the mistakes made by family physicians in Iraq is notably absent [8].

Objective of the study

a. To identify the medical errors among family physicians.
b. To evaluate the possible contributing factors.
c. To find out the frequency between medical errors and contributing factors.

2. Materials and Methods

Setting and study design:

This study is across sectional study. This study is conducted among Iraqi family physicians in primary health care centers in Iraq.

Study setting:

Duration:

2nd of January 2024 to 1st July 2024.

Study subject

The inclusion and exclusion criteria

The inclusion criteria:

Family physician specialist who agree to fill the questionnaire.

Respond Rate was 17%.

The exclusion criteria:

a. Family medicine resident.
b. Refusal of doctors to participate with study.

Sampling:

By convenience sampling via online questionnaire.

Sample size:

An estimated of 400 Iraqi family physician

Procedure

Questionnaire:

The data was collected by using a structured questionnaire prepared by the researcher after reviewing similar studies and articles to collect information, then revised by the supervisor, with her advices. The questionnaire contains close ended questions and it was divided into three parts:

a. Sociodemographic characteristic of the participants including age, gender, years of experience.
b. The common practical errors among family physicians including (misdiagnosis of patients ,prescription errors ,failure to obtain informed consent from patients, documentation errors, communication errors ,failure to follow established protocols or guidelines, surgical errors , failure to recognize deteriorating patient condition ,lack of proper hand hygiene and infection control practices) contains close ended questions with likert scale(rarely occurs, occasionally occurs ,frequently occurs ,not applicable) and others .
c. Contributing factors to error: including (workload and time pressure, fatigue and sleep deprivation, lack of proper training or education, poor communication among healthcare team members, equipment or technology failures, personal stress or burnout, organizational culture that emphasizes productivity over patient safety) contains close ended questions with likert scale (disagree, neutral, agree) and others .
d. Pilot study was done among 10 family physicians in PHC in Kirkuk.
e. The questions were distributed via google forms, and participants provided their consent to complete the questionnaire at the start of the form. The aims and purpose of the study were clearly explained to all participants, and the target group of doctors was identified.

Statistical analysis:

Data were analyzed using the statistical package for social sciences (SPSS, 26 version) for getting frequencies and chi square test used to get the association. P- value equal or less than 0.05 statistically regarded significant.

Ethical consideration:

a. Approvals was taken from Arab board of health specializations.
b. The objectives explained to all participants of the study and the consent obtained from all participants.

3. Results

Sociodemographic Characteristics

Table 1 show distribution of study sample according to sociodemographic character; they were mainly female (86.5) %, with main age group between 30-40 years (47%). The years of experience as doctors mainly were between 10-20 years (50.5%).

Table 1. Sociodemographic characteristic of studied group (n=400).

Sociodemographic Characteristics Characteristic	Category	Frequency (n)	Percentage (%)
Age Group	<30 years	21	5.3
	30-40 years	188	47.0
	41-50 years	152	38.0
	>50 years	39	9.8
Gender	Male	54	13.5
	Female	346	86.5
Years of Experience	<10 years	88	22.0
	10-20 years	202	50.5
	21-30 years	99	24.8
	>30 years	11	2.8

Table 2 presents the responses of participants regarding various attitude statements related to medical errors. The data show that (59.75%) of doctors indicated that misdiagnosis errors occur occasionally. Similarly, (44.75%) of doctors reported that prescription errors also occur occasionally. For failure to obtain informed consent from patients, (37.25%) of doctors chose "occasionally occurs." Documentation errors were marked as occurring occasionally by (43%) of doctors, while (43.25%) indicated that failure to follow established protocols or guidelines occurs occasionally as well.

On the other hand, (39.75%) of doctors reported that communication errors rarely occur, while (56.5%) chose "rarely" for the failure to recognize a deteriorating patient's condition. Additionally, (52.25%) of doctors marked the lack of proper hand hygiene and infection control as occurring rarely. Furthermore, (39.25%) of doctors selected "not applicable" for surgical errors.

Table 2. Common Practical Error among family doctors.

Errors	Frequently Occurs No.(%)	Occasionally Occurs No.(%)	Rarely Occur No.(%)	Not Applicable No.(%)
Misdiagnosis of patient	50(12.5)	239(59.75)	95(23.75)	16(4.0)
Prescription errors	55(13.75)	179(44.75)	129(32.25)	37(9.25)
Failure to obtain informed consent from patients	77(19.25)	149(37.25)	139(34.75)	35(8.75)
Documentation errors	101(25.25)	172(43.0)	92(23.0)	35(8.75)
Communication errors with patients	56(14.0)	146(36.5)	159(39.75)	39(9.75)

Failure to follow established protocols or guidelines	82(20.5)	173(43.25)	110(27.5)	35(8.75)
Surgical errors(minor)	34(8.5)	90(22.5)	119(29.75)	157(39.25)
Failure to recognize deteriorating patient condition	49(12.25)	91(22.75)	226(56.5)	34(8.5)
Lack of proper hand hygiene and infection control practices	68(17.0)	81(20.25)	209(52.25)	42(10.5)

Table 3 shows response of participants to contributing factors. The majority of participants agreed with (89.25%) for workload and time pressure, (80%) for fatigue and sleep deprivation, (64%) for lack of proper training or education, (66.3%) for poor communication among healthcare team members, (74.75%) for equipment or technology failures, (77%) for personal stress or burnout, and (77.25%) for organizational culture that emphasizes productivity over patient safety.

Table 3. Response of participants to Factor Contributing to Errors.

Contributing Factor	Agree No.(%)	Neutral No.(%)	Disagree No.(%)
Workload and time pressure	357(89.25)	22(5.5)	21(5.25)
Fatigue and sleep deprivation	320(80.0)	55(13.75)	25(6.25)
Lack of proper training or education	256(64.0)	81(20.25)	63(15.75)
Poor communication among healthcare team members	265(66.25)	68(17.0)	67(16.75)
Equipment or technology failures	299(74.75)	59(14.75)	42(10.5)
Personal stress or burnout	308(77.0)	39(9.75)	53(13.25)
Organizational culture that emphasizes productivity over patient safety	309(77.25)	51(12.75)	40(10.0)

Table 4 shows distribution between prescription errors and years of experience, the highest rate found between occasional prescription errors and years of experience (63.6%) of >30 years.

Table 4. Distribution of prescription errors in association with Years of experience as doctor.

		Prescription errors					
		Not Applicable	Rarely Occur	Occasionally Occur	Frequently Occur	Total	P-value
Years of experience as doctor	<10	9	35	34	10	88	0.043*
		10.2%	39.8%	38.6%	11.4%	100.0%	
	10-20	11	65	94	32	202	
		5.4%	32.2%	46.5%	15.8%	100.0%	
	21-30	17	27	44	11	99	
		17.2%	27.3%	44.4%	11.1%	100.0%	
	>30	0	2	7	2	11	
		0.0%	18.2%	63.6%	18.2%	100.0%	
Total		37	129	179	55	400	
		9.3%	32.3%	44.8%	13.8%	100.0%	

*Chi square test

Distribution between failure to obtain informed consent from patients and age, the highest rate was between occasional failure to obtain informed consent from patients and age (56.4%) 0f >50 age group, also with years of experience which was (45.5%) of years of experience group >30.

4. Disucussion

Sociodemographic factors

The highest percentage of age was among 30-40 years, with 47%. This goes with a study conducted in china, [13] in which the highest rate was among doctors 30-39 years' age group with (42.2%). The cause of this result is due to that physicians in their 30s and early 40s are often in the most active phase of their careers and may be more accessible and available to participate in studies.

In terms of gender, the female population was notably higher (86. 5%).This finding is similar to results of a study conducted to Washington, [7] the total percentage was highest in females (56.4%) While in a study done in Oregon and Southwest Washington [14] found that the percentage of females was lower, at 26%.These results may be because Iraqi family physicians more likely to be female.

When considering years of experience, the highest percentage was among those with 10-20 years, accounting for (50.5%).This go with study conducted in American [15], in which the highest rate was among 11-20 years of practice (58.6%). These results may be because female doctors more prone to apply to family medicine specialty.

Common Practical Error among family doctors

In terms of practical errors, the most common issue was documentation errors, which accounted for (25.3%).This finding is similar to results of a study conducted in (Malaysia) [16] in which extremely high rate of documentation errors founded (98%), also similar to study conducted in (United States) [17] in which the documentation error was the highest rate (13.6%). These results may be because of lack of standardized procedures for documentation, healthcare professionals may inconsistently record patient information, leading to errors.

Factor Contributing to Errors

The main contributing factor to errors was identified as workload, which had the highest percentage which accounted for (89.3%). This finding is similar to results of a study conducted in (Pakistan) [18] in which found that the long duty hours is the highest contributing factor (65%). This is may be due to high patient number that make family doctors responsible for large number of patients.

Errors and sociodemographic factors

Regarding the prescription errors in related to years of experience, present study showed that increase years of experience related to increase prescription errors (63.6%) in contradict those of study conduct in (Unites States) [19] in which find that physicians with less experience were at increased risk of prescription errors. This results may be due to high workload and leadership responsibilities of experienced doctors, such as mentoring junior doctors, managing a practice, or handling administrative tasks. These additional duties can lead to increased workload and divided attention, contributing to errors.

5. Conclusion

a. Frequent medical errors were noted in primary care among family physician in Iraq.
b. The most common errors identified were related to documentation errors
c. The study demonstrated that factors (workload, fatigue and sleep deprivation, burnout, and organization culture affect patient care), are common causes of errors made by family physicians.

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