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ASSESSMENT OF NURSES' OPINIONS ON THE REPORTING BEHAVIOR OF MEDICATION ERRORS IN HOSPITALS AL-DIWANIAH GOVERNORATE

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ABSTRACT

***Background**: Medication errors pose a substantial public health concern, leading to higher rates of death and illness, and adversely affecting the healthcare system through increased expenses. Medication errors can undermine the confidence of healthcare providers in their abilities and the healthcare system as a whole. International endeavors have been undertaken to deal with these concerns. **Objective:** This study investigates nurses' perspectives on reporting medication errors, including their attitudes toward reporting and the barriers they encounter in reporting. **Methods**: This is a cross-sectional descriptive study that included a cohort of 355 nurses employed in three public hospitals as well as a private hospital within Aldiwaniah City. The nurses were solicited during their work shifts and requested to fill out a self-administered questionnaire comprising five sections, which was formulated based on preexisting literature. Of the 355 nurses who were approached, 352 of them completed the questionnaire. The process of data analysis entailed the utilization of descriptive statistics. **Results:** The study found that 64% of nurses don't report medication errors due to early intervention. 56.8% document incidents and verbally report errors, a high percentage compared to previous research. 44.6% verbally report personal errors, a concern for nurses. Barriers include a lack of understanding of medication errors' definition and the correct reporting time using incident reports. Many nurses feel shame, discomfort, and worry about patient safety. **Conclusion and Recommendations:** Most nurses do not report medication errors due to barriers such as inadequate understanding of the error definition, uncertainty about reporting timing, and fear of disciplinary consequences. The study found significant associations between uncertainty regarding medication errors, gender, training courses, ward knowledge, lack of knowledge about reporting timings, hospital type, working hours, and days per week, work shift fear, and fear of punishment or job loss. Consistent with previous studies, there was an association found between many nurse demographic attributes and the attitude of nurses towards reporting medication errors. To remove or reduce this safety issue, these nurses within an organization may require assistance in defining an ME, determining when they should report it, and how to report it to whom.*

INTRODUCTION

Healthcare practitioners prioritize patient safety in their quest to deliver safe and effective care. As noted by Carayon *et al.*, (2021), the administration of medication and the documentation of it can take up to thirty percent of a nurse's time in a hospital. Technology has had a significant impact on nursing practice, especially when it comes to record-keeping and medication administration. New drugs, devices, and electronic monitoring methods have all been introduced, and clinical information systems work to improve patient safety by utilizing technology in a way beneficial to the nurses (Al Khreem and Al-khadher, 2021).

Error reporting is essential because it plays a key role in identifying and evaluating the reasons of errors, the insights from which are intended to reduce recurrences owing to increased awareness and the adjustments that have been made as a consequence (Soydemir, Seren Intepeler and Mert, 2017). According to several previous studies, nurses underreported ME by 50% to 96% (Khan and Tidman, 2022). While a study conducted by Osborne et al found that 3.5% of nurses are of the belief that all medication errors (MEs) have been reported, another study suggests that nurses themselves have faith in the reporting of only 25% of all MEs by utilizing Incident Reporting (IR) (Al-Sarawan, 2014) , in Canada study, the majority of nurses (66%) always disclose errors that endanger patients, but just 20 percent of nurses record near-misses that do not endanger patients (Ahmed, 2016). Medication Errors are believed to be underreported by nurses, according to nurse managers and physicians. While Another study found that both commission and omission errors are not reported (Eltarhuni, Tawfeeq and El-Abidi, 2021). The error that most frequently that goes unreported is the failure to provide a medicine because nurses believe that patients won't suffer any damage. On the other hand, errors that lead to overmedication are most commonly recorded (Al-Sarawan, 2014).

To report medication error, Nurses must have the ability to recognizing that a medication error has occurred, then believe that the error warrants reporting, then be willing to admit that they have made an error in medication, and finally have the courage to face their shame and fear of being associated with their medication errors (Al-Sarawan, 2014). Under-reporting of medication errors (ME) is influenced by numerous factors and a significant contributor to the lack of reporting and under-reporting of ME is the lack of consensus on the definition of an error ,while many studies have demonstrated that approximately 95% of medication errors go unreported due to the fairness of staff members regarding potential disciplinary actions (Jember *et al.*, 2018). Moreover, the possibility of underreporting may arise as a result of a deficiency in understanding the significance of complying with the prescribed dosage of medication (Hamed and Konstantinidis, 2022). nurses more often report errors that result in overdosing on medicine than underdoing (Al-Sarawan, 2014). Another important factor in the underreporting of ME is the nurse managers' expressed worry for their organizations reputations, which may prevent them from reporting ME (Dunn, 2003). They may not report MEs due to lack of awareness, issues with the reporting process (paperwork, time constraints, lack of understanding), forgetting during busy times, lack of time, and lack of awareness of reporting importance (Hamed and Konstantinidis, 2022).

Perception that reports don't lead to changes or benefits and errors without harm affect nurses' attitudes towards reporting medication errors (Savva *et al.*, 2022). A Jordanian study of 799 nurses found female nurses are more likely to report medication errors than male nurses. However, many avoid reporting due to fear of negative reactions, lack of seriousness, and fear of disciplinary action or job loss (Mrayyan, Shishani and AL-FAOURI, 2007). While A study in

the Middle East found 26% of nurses reported all medication errors, while 46% self-reported them, highlighting personal barriers to non-reporting (Kagan and Barnoy, 2008).

METHODOLOGY

Using a descriptive cross-sectional design, the study was carried out in Al-Diwaniyah City, Iraq. The period for collecting data was August 2023–January 2024. In 2014, the population of this city in the province of Al-Qadisiyah was estimated to be 1.5 million. The city contained three governorates and three private hospitals. The Epi_info software, Version 7, was used to calculate the sample size while taking the population, response distribution, confidence interval, and error margin into account. A minimum of 323 nurses were included in the sample, with a 50% response distribution, a 5% error margin, and a 95% confidence level. The total number of participants was increased to 355 nurses to improve accuracy after allowing for a 10% refusal-to-respond rate.

Inclusion Criteria:

Each and every registered nurse who works at the hospitals mentioned above.

Exclusion Criteria:

The study excluded nurses working in administrative positions, outpatient clinics, and operating rooms, as they were unable to administer medication to individuals in these environments. In addition, nurses who have a minimum of one month of work experience carry out their responsibilities under supervision & are not allowed to administer medication independently.

Data Collection Method:

The study involved conducting site visits, engaging in discussions with nurses, and administering a standardized questionnaire. The objective was to promote engaged involvement and elucidate the objective of the questionnaire. Every month, a total of 60 nurses were involved in the interview procedure, with each interview taking a typical of 15-20 minutes. Contact details were withheld to safeguard data confidentiality.

Statistical Analyses:

To fulfill the aims of the present study, we employed the SPSS program, specifically version 26, for both data input and analysis. The subsequent data analysis process was employed. Categorical variables were described using frequency tables, while continuous variables were described using standard deviation and mean. The frequency of each option chosen for each questionnaire item was computed. The chi-square test was utilized to analyze the associations between the independent and dependent variables, which were qualitative. This investigation utilized a level of significance of 0.05.

Ethical Considerations:

Prioritizing ethical issues is critical when attempting to protect the researcher or researchers, as well as, more importantly, the individuals participating in the study (AL Qrishah, 2017).These ethical considerations were taken into account, and the Diwaniyah Health Directorate, Department of Development or Training, and Ethics Committee all granted their approval. The study's implementation was authorized by both hospital management and nurse managers at

their facilities. The verbal consent of the study participant has been acquired. The gathered data was maintained confidentially and anonymously. The sole purpose of gathering all information was for research.

RESULTS AND DISCUSSION

The nurses who participated in the study had ages ranging from 18 to 50 years old. Female nurses constituted a significant majority, accounting for 72.4% of the total. The proportion of male nurses among the participants was 27.6%. Most individuals had only completed high school, and 51.2% were unmarried. The majority of individuals are employed in government-run hospitals, while a smaller percentage work in private healthcare facilities. Most nurses dedicate 1-6 hours per week to their work, with the morning shift being the most prevalent. During the past two years, a significant proportion of nurses, specifically 63.4 percent, actively participated in conferences or seminars focused on addressing drug errors. The emergency room (ER) had the highest proportion of nurses (33%), while an ICU had the lowest proportion (3.1%).

In an effort to understand the reporting perspective of nurses with relation to ME, we first asked about what kind of action they would take in the event of a medication error and asked them to describe how they would report it. According to the findings shown in Table 1, a majority of the nurses surveyed, namely 64%, expressed their tendency to don't report medication errors due to their early intervention in correcting the error. Additionally, 56.8% of the nurses said that they both document an incident report (IR) and verbally report medication errors (ME) if they occur and when compared to previous research, this is a high percentage. Furthermore, 44.6% of the nurses showed their method of verbally reporting any ME they personally committed, it is well knowledge that nurses who commit medical errors (MEs) feel shame, discomfort, and worry about patient safety. They also choose to report the error verbally in order to avoid punishments and the anger of both their managers and patients.

Table (1) Nurses' behavior when medication errors occur

Item	Often	Rarely	Never
	Frequency %		
Report a medication error by writing an accident report	200 56.8%	109 31%	43 12.2%
Report a medication error without writing an accident report	157 44.6%	132 37.5%	63 17.9%
Don't report as I timely intervened to correct the errors	225 64%	79 22.4%	48 13.6%

Additional nurse responses to questions about reporting medication errors are included in Figure 1. The majority of nurses (70.5%) showed a lack of comprehension of the definition of a medication error, and a significant percentage (64.5%) were unsure of the correct time in which to report such errors using an incident report. In the same way, a significant proportion of nurses, 61.1%, express fear regarding possible disciplinary actions, such as loss of job, as a result of committing an error. "Afraid of manager reaction" (53.7%), this may due the focus would be on the individual nurse's punishment rather than the growth of the system "not believing errors were serious enough, and "afraid of coworkers' reactions" (42.6%) were among the reasons mentioned for not reporting problems.

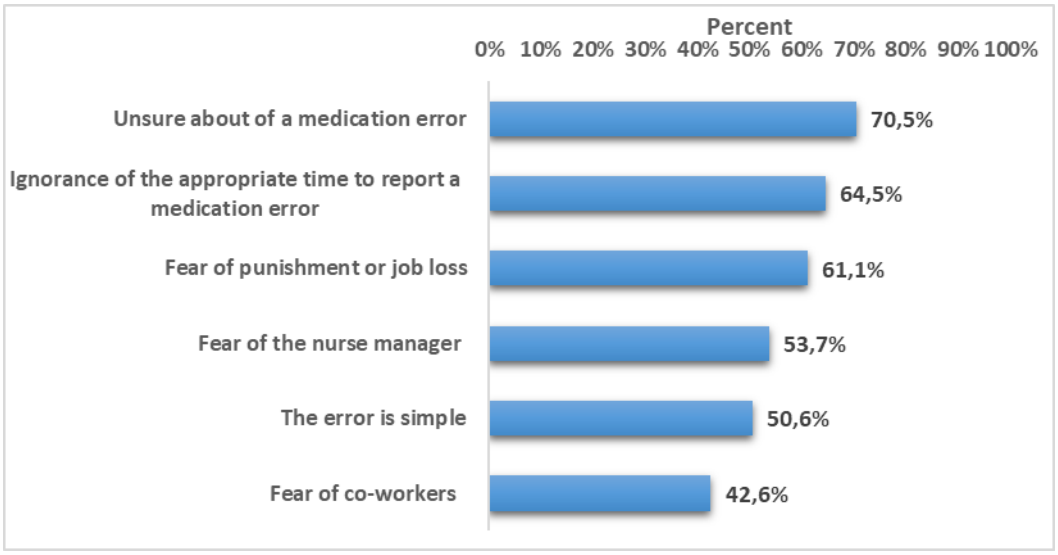

Figure 1 barriers to reporting drug errors

as shown in table.2. A chi-square test was used to look for possible links between sociodemographic and occupational factors and the top barrier to reporting ME. Each factor was compared to "uncertainty regarding a medication error," three statistically significant relationships were established with regard to gender, training courses, and the specific ward in which the error occurred. In this regard, female nurses were more confused than male nurses regarding the definition of a medication error (P = 0.036), Nurses who have not attended medication error training courses are more confused about the concept of a medication error than nurses who have (P = 0.002), Furthermore, nurses working in pediatric wards show a greater degree of confusion about medication errors than nurses working in other wards (P = 0.001).

Table (2) Barrier "Uncertain about ME medication errors" in relation to socio-demographic and occupational characteristics

I am usually sure what constitutes a medication error						***X²***	***P-value***
Variables	Category	Yes		No			
		N	%	N	%		
Age	18-25	124	67.8%	59	32.2%	3.372	.338
	26-33	98	72.6%	37	27.4%		
	34-41	20	83.3%	4	16.7%		
	>41	6	60%	4	40%		
Gender	Male	60	61.9%	37	38.1%	4.756	.036
	Female	188	73.7%	67	26.3%		
Educational	Secondary	80	73.4%	29	26.6%	1.624	.444
	Diploma	108	67.1%	53	32.9%		
	Bachelor's or above	60	73.2%	22	26.8%		
Marital status	Single	138	71.1%	56	28.9%	0.000	.999
	Married	106	71.1%	43	28.9%		
Experience	<5 years	120	66.3%	61	33.7%	3.485	.175
	5-10 years	98	73.7%	35	26.3%		
	>10 years	30	78.9%	8	21.1%		
Type of hospital	Government	232	70.7%	96	29.3%	0.178	.649
	Private	16	66.7%	8	33.3%		

Working hours	1-6 hours	100	66.2%	51	33.8%	3.183	.204
	7-12 hours	98	71.5%	39	28.5%		
	>12 hours	50	78.1%	14	21.9%		
Working days per week	<5 days	60	71.4%	24	28.6%	0.05	.891
	5-7 days	188	70.1%	80	29.9%		
Work shift	Morning	202	69.7%	88	30.3%	0.505	.541
	Evening	46	74.2%	16	25.8%		
Training courses	Yes	144	64.6%	79	35.4%	10.109	.002
	No	104	80.6%	25	19.4%		
Wards	ICU	8	72.7%	3	27.3%	26.779	<.001
	Surgery wards	42	53.8%	36	46.2%		
	Emergency	84	72.4%	32	27.6%		
	Esoteric&Gynecology	28	58.3%	20	41.7%		
	Pediatric	86	86.9%	13	13.1%		

A study revealed that 64% of nurses do not report medication errors due to their early intervention, a significant issue as it is crucial for healthcare providers to avoid confusion and divert from the true cause of patient deterioration, which is (ADE). 56.8% of nurses document incident reports and verbally report errors, a high percentage compared to previous research. However, the proportion of errors reported via written IR is growing over time. 44.6% of nurses verbally report errors, a practice that is often avoided due to feelings of shame, discomfort, and concern for patient safety. Verbal reporting is also often used to avoid punishments and anger from managers and patients. Additionally, verbal reports are often forgotten or ignored during work, making verbal reports useless for creating a database for preventing errors and establishing strategies and policies. The results of the present study are inconsistent with a study done in Palestine, wherein it was observed that among surveyed nurses, 22% refrained from reporting medication errors (ME), 78% reported them verbally, and 59% documented an incident report (IR) in writing while also reporting verbally in cases of ME occurrence(Al-Sarawan, 2014). The results also disagree with a study done in Turkey, which showed The mean percentages of reporting were found to be 46.7% for non-reporting, 49.4% for reporting verbally, and 29% for using the incident reporting system (Dirik *et al.*, 2019).

The study found that a majority of nurses (70.5%) lack understanding of the definition of a medication error and are unsure of the correct time to report such errors. This is due to a lack of agreement on standard definitions, an ineffective reporting system, and lack of management instructions. Additionally, 61.1% of nurses' express fear of disciplinary actions, such as job loss, due to errors. A Canadian study revealed that 82.3% of nurses don't know what a medication error is or when to report an error. Other reasons for not reporting include feeling the error is serious enough (52.9%), fear of manager reaction (64.7%), and fear of coworkers' reactions (58.8%). Additionally, a significant percentage (76.4%) worry about facing disciplinary action (losing their job) due to an error. (Ahmed, 2016). A study in Iraq found that 76% of nurses believe the definition of medication errors is unclear. Additionally, 48% feel fearful towards their head nurse, physician, or management, while 61% fear job-related punishments. Additionally, 47% experience negative responses from administrators. Furthermore, 53% of nurses may view errors as not serious enough to warrant reporting (Saker, Shlash and Abdulrazaq, 2021), The text emphasizes the importance of accurately defining medication errors and setting guidelines and standards to protect nurses' rights.

A study found that female nurses were more confused about the definition of a medication error than male nurses, possibly due to increased knowledge gained in private nursing clinics. Nurses who had not attended medication error training courses were also more confused, as these courses increase knowledge related to medication errors and the correct definition of errors. Additionally, nurses working in pediatric wards showed a greater degree of confusion about medication errors than those in other words, possibly due to differences in the child's characteristics, weight-based treatment type, adverse effects, and treatment limitations. These findings highlight the importance of understanding and addressing medication errors in nursing.

The findings are in contrast to research conducted in Palestine, the study reveals that there is no significant association between the uncertainty about timing of reporting medication errors using incident reporting (IR) and the number of years of experience working in a hospital setting. However, there are no significant associations between socio-demographic factors and other barriers to reporting medication errors (Al-Sarawan, 2014) , The study's reporting system may be similar to ours, but it excludes private hospitals, which are major health service providers in both countries.

CONCLUSION

Most nurses questioned do not report medication errors as they deal with them immediately. The main barriers preventing nurses from reporting medication administration errors include an inadequate understanding of the medication error definition, unknowns about the proper timing for reporting such errors via an incident report, and fear of potential disciplinary consequences. The associations between "uncertainty regarding a medication error," gender, training courses, and ward.

Recommendations

ME reporting instructions should be presented in the most pleasing manner possible.
The General Department of Health & the Ministry of Health might employ more nurses to address the issue of a shortage of nurses in medical facilities. Encouraging all nursing staff members working in hospitals to take part in medication error training courses.

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