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Assessing Nurses' Knowledge on Medication to Reduce Errors in Iraq

Menilai Pengetahuan Perawat tentang Pengobatan untuk Mengurangi Kesalahan di Irak

Wasfi Dhahir Abid Ali, Wasf.Abid_ali@uobasrah.edu.iq, (1)

Basic science Department, College of Nursing, University of Basrah, Basrah, Iraq, Iraq

Dhuha Radhi Hashoosh, Dhuha@gmail.com, (0)

College of Nursing, University of Basrah, Basrah, Iraq, Iraq

Husain Sameer Mishet, Husain@gmail.com, (0)

College of Nursing, University of Basrah, Basrah, Iraq, Iraq

Samahir Hameed Sabri, samahir@gmail.com, (0)

Basic science Department, College of Nursing, University of Basrah, Basrah, Iraq, Iraq

Maher A. Atiyah, Maher@gmail.com, (0)

Fundamentals of Nursing Department, College of Nursing, University of Basrah, Basrah, Iraq, Iraq

(1) Corresponding author

Abstract

General background: Administering and preparing medications are fundamental aspects of nursing practice that significantly influence patient outcomes. **Specific background**: Medication errors during preparation or administration can lead to adverse effects, and assessing nurses' knowledge in this area is crucial for improving patient safety. **Knowledge gap**: Limited studies have examined the specific knowledge of nurses in Iraq, particularly in Basra hospitals, regarding these practices. **Aims**: This study aims to assess the knowledge of nurses in Basra Governorate hospitals concerning medication preparation and administration, identifying areas for improvement to enhance patient care. **Results**: The study surveyed 70 nurses (55.71% female and 44.28% male), with 47.1% holding a BSc in nursing sciences, 28.57% with a diploma, and 24.28% from secondary nursing schools. Regarding experience, 31.42% had less than one year, and 30% had 1-5 years of experience. Participants worked across emergency, internal medicine, surgery, and other departments. Nurses demonstrated a significant mean score of 1.84 in knowledge regarding drug preparation practices and a score of 1.74 in knowledge regarding drug administration, both indicating satisfactory understanding but with variability across departments. **Novelty**: This study provides specific data on nurses' knowledge in Basra hospitals, a region that has not been extensively studied in the context of medication management errors. **Implications**: These findings suggest that while nurses possess adequate knowledge of drug preparation and administration, continued education and training, especially for less experienced nurses, may further enhance patient safety. The study highlights the need for targeted interventions in Basra to address gaps in clinical practice and reduce medication errors.

Highlights:

1. Medication errors directly affect patient outcomes and treatment effectiveness.
2. Nurses' knowledge varies by experience and department in Basra hospitals.
3. Continuous training improves medication safety and patient care quality.

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Introduction

One of the most important procedures for guaranteeing patient safety and excellent quality of life is proper drug administration.The World Health Organisation (WHO) has made it a priority to reduce the harm caused by severe and preventable drug mistakes by 50% in all nations. Safety is important, as indicated by rules governing[1] and many governments and international health organizations[2]. an estimated 42.7 million medical events every year involving diagnosis, medicine prescription and distribution, paperwork administration, surgery, and decision-making. [4.5] It follows that all prescriptions should only be filled after taking into account the patient's allergy status and according to drug administration "rights." Additionally, confirming a patient's allergy status is standard procedure in healthcare; it improves safety and averts a potential MAE.[6,23] usage of pharmaceuticals that have been deemed safe and effective for such usage but without requiring physician supervision. It's available through pharmacies without a prescription and is referred to as "over-the-counter" (OTC). Supermarkets and other retail shops carry over-the-counter (OTC) products in some countries. It might lead to several issues throughout therapy. [7,22] pharmaceutical mistakes can lead to serious injury, incapacity, or even death when they influence prescription, transcribing, dispensing, administration, and monitoring procedures. These errors can be caused by inadequate pharmaceutical systems or by human factors including weariness, unfavourable environmental circumstances, or a staffing shortage. (2020, Abdulhamed) In up to 6.5% of hospital admissions, medication mistakes result in longer hospital stays, disabilities, and fatalities[8]. Because they are typically the last person to verify that the prescription is accurately prescribed and distributed before administration, nurses have a special role and duty in the administration of medication [9,24].

Errors are a natural part of being human. The process of cognitive and behavioural adjustments that leads to the development of appropriate behavioural skills is the root cause of many mistakes. Following medical advice is crucial to the recovery process and the treatment of patients. Additionally, medication errors are a major factor in treatment costs and patient safety, posing a risk to patients and their families. As such, medication errors constitute a fundamental aspect of nursing performance. One of a nurse's most important responsibilities is definitely giving medication because mistakes might have unexpected, dangerous effects on the patient. Errors with medications can have negative effects including higher death rates, longer hospital stays, and higher medical costs. [10,11,12,13,14] According to Mohammad Ali et al., 64.55% of the nurses have committed medication mistakes. Furthermore, 31.37% of the interviewees stated that drug mistakes were about to happen. The most often reported mistake categories were incorrect infusion rate and dose.[15].

Methods

The current study was conducted to assess the knowledge of nurses in some Basra hospitals in Iraq about administration and preparing medications and their impact on the patient's health. 70 female and male nurses participated in the questionnaire prepared to achieve the goal. The questionnaire included firstly demographic information for the participants (gender, year of experience, educational level and work places)and secondly Nurses knowledge regarding practices during preparation of medication and Nurses knowledge regarding practices during drugs administration. The data was statistically analyzed to extract Replications, average percentage, and significance of the effect.

Result and Discussion

		F	%
gender	female	39	55.71%
	male	31	44.28%
Educational level	Secondary school	17	24.28%
	diploma	20	28.57%
	BSc	33	47.14%
	MSc.	0	0%
	Ph.D.	0	0%
Years of Experience	less than yea,<,1	22	31.42%
	1-5	21	30%
	6-10	7	10%
	11.15	7	10%
	15 more	13	18.57%
Workplace	Emergency	19	27.14%
	esoteric	6	8.57%

surgery	9	12.85%		
Other	36	51.92%		

Table 1. *The percentage and frequently of demographic characteristics.*

The results of the present study table (1) regarding demographic characteristics showed that most of the participated nurses were female (55.7%) that because female offer this jape more than male , as well as the results showed the high percentage of nurses had BSc in nursing (40.1%) that related to the out come of nursing college. About year of experience, the high percentage of nurses less than one year (31.4%) the reason is due to the employment of new graduates of nursing colleges in hospitals .

Table(2 regarding the information of nurse about preparation of medication most of them follow the roles of drugs preparation and have adequate information and data analysis showed a significant mean of score (1.84). as well as the results show a significant mean of score (1.74). Assessing nursing students in various settings and determining whether there is a relationship between their clinical practice and their perceived and real degree of medication competence would be an intriguing project for future study. The tool created here could also be used to investigate how nursing students apply and transfer their learning once they start their professional careers. This would allow for the targeting of additional training initiatives where they are most needed and assist in closing the theory-practice gap that has been documented in the literature. [16,21]

Item of preparation of medication		Not done		done			MS	S
		F	%	F		%		
1	Verifies that each drug's prescription is current and unambiguous in the medication administration record. endorsed by the prescribing physician..	0	0	70		100%	2	s
2	cleans hands before handling prescription drugs.	19	27.14%	51		72.85%	1.7	s
3	assembles the equipment needed for the drug round on the drug tray.	9	12.85%	61		87.14%	1.87	s
4	Compare the medication name and dose on the prescription sheet two times.	9	12.85%	61		87.14%	1.87	s
5	effortlessly reads the prescription for the drug.	14	20%	56		80%	1.8	s

6	Write the name of the drug on syringes and bags.	25	35.71%	45	64.28%	1.64	s
7	Verifies the medication's expiration date.	10	14.28%	60	85.71%	1.85	s
8	Verifies that the precise guidelines for administering particular medications are followed, such as if it is preferable to take prescriptions on an empty stomach.	13	18.57%	57	81.42%	1.81	s
9	accurately administers the dosage.	8	11.42%	62	88.57%	1.88	s
10	Keep an eye out for any adverse effects in the patients.	10	14.28%	60	85.61%	1.85	s
11	determines if the resident is aware of any allergies.	8	11.42%	62	88.57%	1.88	s
12	Verifies the recommended time for each medication.	11	15.71%	59	84.28%	1.84	s
13	Verify the last time the medicine was given.	9	12.85%	61	87.14%	1.87	s
14	Verifies each drug's recommended dosage according to the chart.	7	10%	63	90%	1.9	s
15	Verifies the dosage and form of each medication as prescribed.	8	11.42%	62	88.57%	1.88	s

Total MS	1.84 significant

Table 2. *The frequents and percentage mean of score for Nurses knowledge regarding practices during preparation of medication*

MS= mean of score ; S= significancy

NO	Items During administration of drug	Not done F	%	Done F	%	MS	S
1	makes sure the patient is who they say they are before giving them medicine.	11	15.71%	59	84.28%	1.87	s
2	gently conveys information to the resident both before and during the giving of medicine.	21	30%	49	70%	1.7	s
3	The distributing nurse administers all medications individually and right away after preparation.	10	14.28%	60	85.71%	1.85	s
4	remains with the patient until the medication is ingested.	24	34.28%	46	65.71%	1.65	s
5	not to provide residents medication to take on their own at a later date.	24	34.28%	46	65.71%	1.65	s
6	records any omission or delay in the nursing notes.	20	28.57%	50	71.42%	1.71	s
7	Sharps and non-administrated medications should be disposed of in the	5	7.14%	65	92.85%	1.92	s

	proper sealed container.						
8	As soon as the drug has been given, they sign their regular abb reviations on the prescriptio n sheet or medication administrat ion record.	13	18.57%	57	81.42%	1.81	s
9	Keep an eye out for any allergic response while spending several minutes with the patient.	31	44.28%	39	55.71%	1.55	s
10	between residents, they wash their hands.	26	37.14%	44	62.85%	1.62	s
11	Observes the assignment s in relation to the medicine given.	20	28.57%	50	71.42%	1.71	s
12	Observes the duties about the medication prescribed.	10	14.28%	60	85.71%	1.85	s
Total MS		1.74 significant					

Table 3. *Nurses knowledge regarding practices during drugs administration.*

MS= mean of score; S= significance

Several factors affect the safe administration of medications. Some contend that the knowledge and abilities of registered nurses (RNs) may be insufficient for carrying out safe drug management. Others mention the normalization of risk-taking conduct and disruptions, the use of technology, mistakes in design, time restrictions, inadequate communication, a lack of leadership, and out-of-date rules and regulations. [17] It was discovered that medical mistake education improves students' understanding of and awareness of medical errors; moreover, it reduces medical error inclinations and has a favourable impact on nursing students' attitudes towards medical errors. [18] Improvements in post-medicine practice are needed, according to Wabe, Raju, and Angamo's [19,20] study, "Knowledge, Attitude, and Practice of Patient Medication Counselling Among Drug Dispensers in North West Ethiopia." This result may be explained by the nurses' ongoing workload, which contributes to their practice's low performance level.

Conclusion

The present study conclude that The highest percentage of participants nurses were female. Most of the participants have BSc in nursing science Nurses have adequate knowledge about drugs preparation and administration.

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