

Medication errors: Influencing factors and reporting among Nurses working in Teaching Sabratha Hospital in Sabratha

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Introduction

Nurses are regarded as one of the most important groups of hospital personnel saddled with an important task of giving medications to patients. As such, there is the need for adequate awareness of the significance of proper medication identification and administration to avoid potential risks and complications caused by medication errors [1].

To avoid or treat illness, most people worldwide take medications at some point in their lives. However, if medicines are taken incorrectly, they can cause severe harm, disability, and even death [2].

Medication administration is primarily the responsibility of the nurse, who spends up to 40% of their time doing so [5,8]. They serve as the final safety check in the medication administration process and the last line of defense for patient safety especially inpatients [6].

Medication errors can occur at any stage of the medication administration process, including prescribing, transcribing, dispensing, and/or administering. Medication errors that are frequently committed include the following: incorrect dose, incorrect time, incorrect drug, incorrect route, omission of doses, incorrect patient, lack of documentation, and technical errors [9-12].

However, previous research has shown that medication errors are most common/frequent during the administration phase, and these can have dangerous repercussions on patients, medical personnel, and healthcare facilities [2, 3, 4, 7].

The general objective of this study was to determine the state of health quality in Libya by understanding medical errors and thus preventing them and improving patient safety. The specific objectives were to:

- 1- Determine the most important types of drug errors perceived by the nurses.
- 2- Determine the main factors leading to drug errors.
- 3- Describe nurses' perceptions and report behavior regarding drug errors.

Methodology

This is a cross-sectional study of nurses working in the governmental hospital in Teaching Sabratha Hospital between August and December 2022.

A total number of 55 nurses, consisting of all available nurses at the hospital during the study period administering medication to the patients were approached.

Statistical analysis

Data analysis was carried out using SPSS software, version 19.0. To analyse the data, descriptive statistics, pearson's correlation coefficient, one-way ANOVA, and t-test were calculated.

Results

Demographic Information	Categories	Frequency	Percent
Age	21-30 years	36	65.5 %
	31-40 years	10	18.2 %
	> 40 years	9	14.6 %
Gender	Male	10	18.2 %
	Female	45	81.8 %
Marital Status	Married	23	41.8 %
	Single	28	50.9 %
	Widower	04	7.3 %
Level of education	Diploma	26	47.3 %
	Bachelor	21	38.2 %
	Others	08	14.5 %
Year of experience	One month-10years	43	78.2 %

The study participants had more females (81.8%) than males (18.2%) and the age group with the highest number of participants was 20 – 30 years (65.5%). There were more singles (50.9 %) and 47.3% had diploma certification. Based on work experience, 78.2% had worked for 1 – 10 years and 50.9% had worked in other hospitals previously. Most of the study participants were working in the general surgery department, 34.5%, and only one participant (1.8%) was working in the emergency department. There were more people working in the morning shifts (50.9%) than in any other shift.

Table 1: Sociodemographic and duty schedule of study participants (n = 55)

	11 - 20 years	04	7.3 %
	>20 years	08	14.5 %
Previous work in other hospitals	Yes	28	50.9 %
	No	27	49.1 %
Department	Surgical	19	34.5 %
	Medicine	10	18.2 %
	Pediatric	07	12.7 %
	Obstetrics and Gynecology	13	23.6 %
	Emergency	1	1.8 %
	ICU	5	9.1 %
Shift	Morning	28	50.9 %
	Day	11	20 %
	Night	03	5.5 %
	Not known	13	23.6 %

Table 2 examines the drug-related medication errors done by study participants. An equal number of respondents (34.5%) agreed to giving medications at the wrong timing either before or after the prescribed time occurred frequently and rarely, while twenty-seven participants (49.1%) rarely omitted a dose. Drug-related medication errors that most participants never did include giving the intravenous (IV) medications faster or slower than the prescription required (50.9%), giving drugs outside the way it was prescribed (50.9%), wrong quantity (56.4%), wrong dosing (60%), wrong concentration (60%), wrong medication (69.1%), wrong route (47.3%), wrong patient (69.1%) and wrong medication prescription from doctor (67.3%)

Table 2: Drug-related factors enhancing medication errors

	Occurs frequently		Rarely		Never	
	Frequency (%)		Frequency (%)		Frequency (%)	
Giving at an unspecified time (before or after the appointment)	19 (34.5%)		19 (34.5%)		17 (30.9 %)	
Omitting to give a dose	06	10.9	27	49.1	22	40
Give IV medications at a slower or faster rate than prescribed by	6	10.9	21	38.2	28	50.9

your doctor						
An error in the way the medicine was given as directed	16	29.1	11	20	28	50.9
Wrong quantity	16	29.1	8	14.5	31	56.4
Wrong dosing	09	16.4	13	23.6	33	60.0
Wrong concentration	10	18.2	12	21.8	33	60.0
Wrong medication	08	14.5	09	16.4	38	69.1
Wrong route	11	20	18	32.7	26	47.3
Wrong patient	09	16.4	08	14.5	38	69.1
Wrong medication by doctor	10	18.2	08	14.5	37	67.3

From table 3, the prescription-related medication errors included the inability to read instructions due to poor doctor's handwriting (60%) followed by the failure to interpret the doctor's instructions correctly (56.4%), lack of understanding of the abbreviations (56.4%) wrong labelling of medications (54.7%), and wrong identification (52.7%).

Table 3: Prescription-related factors enhancing medication errors

Prescription-related factors	Occurs frequently		Rarely		Never	
	Frequency (%)	%	Number	%	Number	%
Inability to read instructions due to doctor's poor handwriting	33	60	17	30.9	05	9.1
Not interpreting the doctor's instructions correctly	31	56.4	19	34.5	05	9.1
Not understanding abbreviations	31	56.4	18	32.7	06	10.9
The similarity of the names of the patients	29	52.7	18	32.7	08	14.5
Wrong labelling	30	54.5	18	32.7	07	12.7

related factors contributed to medication errors. with the frequently -shows that personnel 4 Table occurring ones being stress (83.6%), work pressure (89.1%), lack of adequate sleep (85.5%), fatigue (96.4%), lack of knowledge about drugs (56.4%), error in dose calculation (52.7%), lack of skills (45.5%), and personal negligence (49.1%). Twenty-six participants (47.3%) chose that

medication error because of difficulty with setting up / administration of intravenous fluids rarely occurred.

Table 4: Personnel-related factors enhancing medication errors

Personnel-related factors	Occurs frequently		Rarely		Never	
	Number	%	Number	%	Number	%
Stress	46	83.6	06	10.9	03	5.5
Work pressure	49	89.1	05	9.1	01	1.8
Lack of adequate sleep	47	85.5	07	12.7	01	1.8
Fatigue	53	96.4	00	00	02	3.6
Lack of knowledge of medicines	31	56.4	17	30.9	07	12.7
Dose calculation error	29	52.7	20	36.4	06	10.9
Lack of skills to administer medicine	25	45.5	21	38.2	09	16.4
Difficulty with administration of intravenous medications	19	34.5	26	47.3	10	18.2
Personal negligence	27	49.1	20	36.4	08	14.5

The workplace-related factors that enhance medication errors as shown in table 5 reveal that the following factors contributed to the frequent occurrence of medication errors: interruption and distraction caused by another person while working (72.7%), interruptions and distractions at work result in poor communication between nurses and others (70.9%), ineffective communication between nurses and doctors (56.4%). insufficient nursing staff (67.3%), working with a nurse who does not have enough experience (54.5%), inadequate medication administration training (56.4%), lack of instructions on how to administer the medication (50.9%), insufficient lighting (45.5%) and disturbance in the department (54.5%).

Table 5: Workplace-related factors enhancing medication errors

Workplace-related factors	Occurs frequently		Rarely		Never		Standard deviation
	Number	%	Number	%	Number	%	
Interruption and distraction caused by another person while working	40	72.7	10	18.2	05	9.1	
Interruptions and distractions at work result in poor communication between nurses and others.	39	70.9	13	23.6	03	5.5	
Ineffective communication between nurses and doctors	31	56.4	16	29.1	08	14.5	
Insufficient nursing staff	37	67.3	14	25.5	04	7.3	
Working with a nurse who does not have enough experience	30	54.5	23	41.8	02	3.6	
Inadequate medication administration training	31	56.4	21	38.2	03	5.5	
Lack of instructions on how to administer the medication.	28	50.9	20	36.4	07	12.7	
Insufficient lighting	25	45.5	25	45.5	05	9.1	
Disturbance in the department	30	54.5	19	34.5	06	10.9	

Table 6 shows the nurses' behavior when drug errors occur. Most respondents (76.3%) reported medication errors verbally most of the times, 54.5% frequently filled an incident report whenever medication error occur, while up to 45.5% never did any form of reporting.

Table 6: Reporting medication error

	Mostly		Sometimes		Never	
	Number	%	Number	%	Number	%
Filling out an incident report	30	54.5	04	7.3	21	38.2
Report the error verbally	42	76.3	08	14.5	05	9.1
Does nothing	20	36.4	10	18.2	25	45.5

Table 7 shows the reasons for not reporting medication errors. Most of the study participants (50.9%) did not report medication errors because they were not sure of the error, and were not knowledgeable as to when to fill an incident form (52.7%). Other reasons were the fear of the director's / director of nursing's reaction (36.4%), the fear of how coworkers' reactions (29.1%),

errors were considered minor and not warranting reporting (38.2%) and fear of being disciplined or losing the job (34.5%).

Table 7: Reasons for not reporting medication errors

Reasons	Yes		No	
	Number	%	Number	%
Not being sure of the error	28	50.9	27	49.1
Knowledgeable about when to fill an incident report for a medication error	26	47.3	29	52.7
Because of the Director's / Director of Nursing's reaction	20	36.4	35	63.6
Because of the fear of coworkers' reactions	16	29.1	39	70.9
Errors were considered minor and not warranting reporting	21	38.2	34	61.8
Afraid of being disciplined or even losing my job	19	34.5	36	65.5

Correlation / Association between sociodemographic and types of medication errors

Discussion

References

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