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Factors affecting Nurses 'Attitude toward Under- Reporting of Medication Administration Errors

[1]Mona Mohamed Mayhob, [2]SafaaHashim
[1]Lecturer of Adult Health Nursing – Faculty of Nursing British University in Egypt
[2]Professor of Obstetrics & Gynecology – Faculty of Nursing British University in Egypt
Corresponding Author: [1]Mona Mohamed Mayhob

Abstract: *Patient safety is a significant challenge facing health care team. An important part of patient safety is the issue of medication administration. One of the most serious issue could threat patient safety is occurrence of medication administrationerrors. Nurses in particular, play a significant role in medication administration. Reporting medication administration errors is considered an essential nursing action that should be donefor maintaining patient safety. Understanding nurses' attitude and perceived barriers toward reporting of medication administration errors is an initial step to avoid causes lead to occurrence of errors, as well as to encourage nurses to report about errors.*

This study was aimed *toidentify the factors affecting nurses' attitude toward under- reporting of medication administration errors.*

Method: *descriptive study design was usedto conduct this study in different hospital departments (medical ward, surgical ward, and ICU) in one of governmental hospital.*

Subjects*: a convenient sample technique was used to include nurses, and numbers of them were60.*

Data Collection Tools*: 2 data collection tools were used as follows;*

first tool; Demographic Data Collection Tool;*toassess nurses' demographic characteristics, as (gender, age, qualification, years of experiences, and working unit).*

Second tool; Medication Administration Errors Assessment Tool; *it is self-administeredquestionnairetool; whichconsists of 3 parts, first part used to assess common medication administration errors, second part used to assess common causes lead to occurrence of medication administration errors, and third part used to assessfactors might lead to under-reporting of medication administration errors.*

Results: *the current study showed that, fifty percent of the participants mentioned that, the common medication administration errors that occurredwere wrong administration time, calculation errors, and delay of administration time. In addition, the majority of the participants reported that;fear from penalty as decreasing their salary and benefits, there is no free blame cultural environment, and in addition, there was only focusing on finding errors and blaming nurses' regardless cause of errors are common factors might lead to under-reporting of errors.*

Conclusion*: this study concluded that, the main factors that lead to under-reporting of medications administration errors are fear from impact of reporting errors, as well as focusing on the on blaming staff rather than find the reasons behind under reporting.*

Recommendation*: the current study recommends that, the hospital administration should be follow some strategies to reassure the staff, and provide them with positive feedback while finding errors rather than blaming them, as well as the hospital administration should put a clear policyfor reporting medication administration errors. Finally the hospital administration should disseminate the cultural of feeling free and secure to report errors if any.*

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I. Introduction

Medication administration errors are knownas the most common important challenges threatening health care worldwide **(Mirzaee et al, 2014).**Medication administrationerrors are often used as one of the most important indicators of patient safety in hospitals because of their common incident and potential injury to patients. The nursing profession is advancing with high standards and specialized knowledge through researches and evidence-based practices. Knowledge changes the attitude and develops confidence for practice. The main responsibility of a nurse is maintaining patients' safety to which she/he is giving care. Nurses play a crucial role in administering medication safely and prevention of errors. However, medication administration errors still occur and it remains a very serious problem in nursing practice **(Valdez, et al, 2012).**

Medication administrationerrors are mistakes associated with health care that are provided for the patients. As a result the patient receives a health careincorrectly, and it may become fatal at times. Medication administrationerror is one of the major concerns of the health team professionals worldwide. A systematic approach to determine the underlying factors that lead to under-reporting of medication administrationerrors required safety of both the patients and heath team members including nursing staff.This study was conducted to identify factors affecting nurses' attitude toward under-reporting of medication administration errors**(Johnson, & Thomas, 2013).**

Medication administration error is considering a major threatening factor for patient's safety. As well as it is a harmful situation and serious event that could occur to the patient during hospitalization. It might lead to adverse outcomes such as increase mortality rate, increased duration of hospitalization, as well as increased medication expenses **(Levinson, 2014)**.There are many factors that initiate occurrence of medication administrationerrors as; ignorance, negligence and increase the gap between evidence to action; in which nursing care competences are not based on scientific background. Several researches approved that almost 10% of hospitalized patients suffer from harmful effect brought by health care team interventions during hospitalization worldwide **(Valiee, et al, 2014).** In case of medication administrationerrors occurrence, nurses must document the exact situation in an incident report form for further analysis. Reporting of medication administrationerrors provides extremely valuable data for prevention of future errors and improving patient safety.Medication administrationerrors can significantly affect patient safety and treatment costs and result in hazards for patients and their families. Medication administrationis probably one of the most critical duties of nurses since the resulting errors may have unintended, serious consequences for the patient **(Hashemi et al 2012).**

It is difficult to obtain accurate statistics of medication administrationerrors since previous studies have indicated that despite the numerous benefits and the moral basis for detection and reporting of medication administrationerrors, nurses as well as health team members hesitate in reporting their errors in order to protect themselves from possible administrative penalties and reactions of patients.The rate of medication administration errors is high in both developed and developing countries.In the third world and developing countries, it is almost impossible to find the accurate number of medication administrationerrors due to lack of proper archiving and reporting systems as well as lack of a data registration system. Determining medication administration errorsis the first step to prevent occurrence of errors**(Cheragi et al 2013).**Findingout causes that lead to under-reporting will help to establish strategies to overcome effect of mediation administration errors.

Significant of the Study

There are several studies stated that medication administrationerrors have significant effect on the patient's condition through increasingmortality rate, length of hospital stay, and related cost. Under-reporting medication administrationerrors may lead to deterioration in patients ' condition. Finally, all these will lead to negative effect on patient's quality of life**(Cheragiet, al 2013).**

Aim of the study

To identifyfactors affecting nurses' attitude toward under-reporting of medicationadministration errors through:

1. Specify the common medication administration errors among nurses.
2. Identify common causes of medication administration errors among nurses.
3. Identify factors might lead to under- reporting of medication administrationerrors.

Research Question:

1. What are the factors that may lead to under- reporting of medication administration errors among nurses?

II. Methods

Study Design, and Setting

This study conducted in different hospital departments (Medical ward- Surgical Ward, and ICU), in one of the governmental hospital.A descriptive study designwas used. This study started at May 2015 and completed at August2015.

Subjects, Sample Type, and Size:

A convenient sampling technique was used, as nursesmatch to the inclusion criteria during data collection which was period of 3 months, the number of subjects participated in this study reached60 nurses.

Inclusion Criteria:

Nurses who at least have more than one year working experience in the setting of the study.

Exclusion Criteria:
Nurses who have less than one year experience, or interrupted working experience by different types of leaves.

Data Collection Tools

The data collection tools were as follows; **first tool is Demographic Data Collection Tool** whichcontains 5 items that asked about demographic data of the participants as; gender, age, qualifications, years of experiences, and working unit**. Second tool is Medication Administration Errors Assessment Tool,** which adopted by the researcher from **(Yung et al, 2016,and Johnson, &Ofosu, &Jattrett2015 & Thomas, 2013),** it consist of 3 parts;part (1) contains 7 items to assess common medication administration errors, part (2) contains 13 items to assess common causes of medication administration errors, part (3)contains 21 items to assess factors that might lead to under-reporting of medication administration errors among nurses.The scoring systemfor each itemwas as follows;if the participant responds by yes, it scored 1, and if the response was no it scored zero. These scores were converted into a percent score.

Phases of Implementing the Study

Implementing this study was donethrough 2 phases; first is preparatory phase which included developing data collection tools, confirm the validity of data collection tools from Jury, obtain approval from the hospital administration to conduct the study, explaining aim of the study, and data collection tools for the participants, obtain written consent from the participants for accepting to participate in the study, and finally conduct pilot study on 10% during the designed data collection period, and the results of pilot study revealed that, the data collection tools need minor modifications and then use it for data collection.So the participants in the pilot study were not excludedfrom the study sample. Second is data collection phase, in this phase the researcher distributed the data collection tools to the participants and asked them to fill it in within 2 days and then the researcher will come back and recollect it again from them.

Ethical Consideration:
Appropriate channels were followedto conduct this study as follows; permission was obtained from the faculty to conduct such study, as well as permission was obtained from the hospital administration to collect data. In addition, written consent obtained from the nurses. Based on the hospital administration request the hospital name is kept to maintain confidentiality of the results, data collection toolswere coded and did not bear participants names.

Results:

Table (1) Demographic characteristics of the participants (N= 60)

Demographic Characteristics items	No.	%
Age:		
>20– 30	32	53.4
>31 – 40	26	43.3
40 and more	2	3.4
Mean	25.8	
SD	±3.12	
Years of Experiences :		
1<5	35	58.3
5 <10	23	38.3
10 and more	2	3.3
Mean	1.45	
SD	± 0.565	
Gender		
Male	14	23. 2
Female	46	76.7
Education:		
Diploma	11	18.2
Technical Institute	31	51.7
Bachelor Degree	18	30
Unit:		
Medical Ward	28	46.7
Surgical Ward	21	35
ICU	11	18.3

Common medication administration errors items	N = 60	
	Frequency	%
Wrong Dose /calculation errors	35	58
Wrong Time	30	50
Delay of administering medication dose	30	50
Omission dose	7	11
Wrong Route	5	8
Wrong medication	5	8

Table (2) Common Medication Administration Errors Reported by the participants (N= 60)

Common causes of medication administration errors	N = 60	
	No.	%
Delay on dispensing medication which lead to overlapping different medications	60	100
Lack of training and experiences	50	83
Misidentification of medication prescription	45	75
Lack of knowledge about medication administration	45	75
Shortage of the staff	40	66.6
Workload of the staff	35	58
Distraction for the nurses while administrating medication	35	58
Failure of staff to adhere to policy and procedure of medication administration policy	30	50
Lack of experiences	20	33.3
Problems with equipment used while administrating medication	15	25
Unclear written prescription	10	17
Calculation error	10	17
Unawareness by how error can occur	5	8

Table (3) Common causes of medication administration errors as reported by the participants (N= 60)

Factors leading to under-reporting of medication administration errors	**N = 60**	
	No.	%
A. Consequence of reporting of medication administration errors		
Fear of the impact of reporting of errors on their salary and benefits	53	88.3
Fear of acquiring colleagues' disrespect	34	56.7
Fear from taking the error report as evidence against staff	32	53.3
Fear of losing the trust of the patient and family	32	53.3
Fear of causing patient-nurse clash	32	53.3
Fear of losing one's job	31	51.7
Fear of being labeled as incompetent nurses and inadequate	30	50
Fear of being blamed and punished by colleagues /supervisors	30	50
Fear that the error report may be used as evidence in a law suit	29	48.3
B. Managerial factors leading to under- reporting of medication administration errors		
Focusing only on blaming nurses, regardless of other factors involved in the occurrence of errors	50	83
Lack of receiving positive feedback from head nurses following to report on medication errors	48	80
Showing over reaction even in case of minor error	47	78.3
The nurses do not know to whom the report should be submitted	35	58.3
C. Factors related to process of reporting leading to under-reporting of errors		
The reporting system does not guarantee anonymity	50	83.3
Lack of positive feedback: the perception that the hospital administration does not provide strategies for correcting errors	50	83.3
The perception that the hospital administration believes that personal inadequacy rather than systemic factors causes medication errors	50	83.3
There is no paying attention to the reporting in case of minor errors	47	78.3
Heavy, busy workloads affect against immediate reporting	43	71.7
Unclear about how to operate the reporting system and complete the requisite procedures	37	61.7
Lack of a clear definition of medication errors	31	51.7
Lack of awareness that an error has occurred	28	46.7

Table (4) Factors reported by the participantsleading to under-reporting of medication administration errors (N= 60)

III. Results

As indicated in table (1) 53.4% of the participants their age ranged between 20-30 years old with mean average of age 25.8 ± 3.12. In addition, it was found in this study 58.3% of the participants their years of experiences ranged from 1year into less than 5 years, and 38.5% of them their years of experiences ranged from 6years into less than10 years, with mean average of years of experiences 1.45 ± 0.565 respectively. Meanwhile, 76.7%, of them were female and 23.3% were males.In terms of qualification, the present study revealed that, 51.7% of the participants graduated from technical institute of nursing, meanwhile, 30% of them graduated from

university, with regard to their work place , the current study revealed that, 46.7% of them work in medical ward, while 35%, and 18.3% of them work in surgical ward and ICU respectively.

Table (2) presents that, 58%, 50%, and 50%, of the participants reported that, wrong medication dose, wrong calculation of medication dose, wrong time of administering medication, delay of administering medication dose are common medication administration errors might be occurred respectively. Table (3) presents that, the entire of the participants 100%, reported that, delay in dispensing medications lead to overlapping of different medication types which lead to medications administration errors, meanwhile83%, 75%, 75%, and 66.6% of themstated that, lack of training and experiences, misidentifications of medication prescription, lack of knowledge about medication administration, and shortage of staff are other common causes of medication administration errors respectively.

Table (4) shows that, factors reported by the participants that might lead to under-reporting of medication administration errors areas follows; 88.3% of the participants stated that, reporting errors might affecttheir salaries and bonus.Meanwhile, 53.3%, of them mentioned that, hospital administration may take reporting errors as evidence against them, losing trust of patients and their families, and causing patient clash all these mentioned factors could prevent them from reporting errors. In addition, given data in table (4) shows that, 83%, 80%, 78.3%, and 58.3%, of the participants mentioned that, focusing only on finding the problem and blaming nurses regardless other factors, lack of receiving feedback from the head nurses, showing over reaction even in case of minor errors are also crucial factors lead to under-reporting errors respectively. With regard to the reporting system, 83.3 % of the participants stated that, the process of reporting does not guarantee anonymity, the hospital administration perceived that, medication administration errors reflects staff incompetence rather than systemic factors, and the same time hospital administration does not provide positive feedback or strategies for correcting errors. In addition, the current study reported that, 78.3%, 71.7%, 61.7%, 51.7 and 46.7% of the participants mentioned that, there is no paying attention in case of minor errors, they were busy, overloaded by work, there is no clear definition of medication errors, and there is lack of awareness that tell them there is an errors occur respectively. All previous mentioned factors could prevent them from reporting errors.

IV. Discussion

Nurses play a major role in decreasing medication administration errors. Therefore, they are the last line of defense to protect the patients against medication administration errors. Reporting of medication administration errors is essential to guide and direct health team to develop strategies to prevent and reduce medication administration errors. Nurses are the front line of defense to interrupt and report medication errors**(Al-Youssif, et al 2013).**This study conducted to identify factors affecting nurses' attitude toward under-reporting of medication administration errors.

The current study reported that, more than two third of the participants were female, fifty percent of them their aged ranged between 20-30 years old. With regard to years of experiences of them, this study showed that, more than fifty percent of them their years of experiences ranged between 1-5 years. In addition, fifty percent of the participants graduated from technical institute of nursing, almost one third of them graduated from university. In relation to their work place, the present study revealed that, more than one third of the participants works in medical ward, one third of them work in surgical ward, less than one third of them works in ICU. Results of the current study reported that, almost fifty percent of the participants stated that, wrong medication dose, wrong calculation of medication dose,and delay of administering medication dose are common errors might occur during medication administration.This might contributed by unclear written prescription, lack of knowledge about importance of administering medication accurately according to allocated time. These findings is supported by **Ofosu& Jarrett (2015)** who stated that, nurses' numeracy has been mentioned as a contributor to error, as well as using of technology will have an effect on calculation skills.

Moreover, in this study, entire of the participants reported that, there is delaying in dispensing medication, and the majority of them mentioned that, lack of training, lack knowledge related to medication administration, misidentification of medication, and shortage of the staff are common causes that might lead to occurrence of errors. This might be due to lack of in-services training, too much work load, as well as lack of knowledge about the prescribed medication. These results are in the same contrast with **Keers et al (2013)** who reported that, misidentification of medication or patient were mentioned as the most commonly reported causes, and at the same time this study results is against the finding of **Keers et al (2013)** who stated that lack of knowledge is not consider as common cause for medication administration errors. Finding of this study stated that, the majority of the participants reported the following, in case of medication administration errors occurrence and if they report about this error, their salaries and bonus might be affected. Meanwhile, fifty percent of them reported that, if the patient and family know about the errors, they might lead to lose their trust, as well as clash between patient and the nursesmight happen.Moreover, reporting of errors may lead to losing

their job. These findings may be due to the nurses do not feel secure from hospital administration side as well as they feel that, they are not secure in their jobs.

These findings in the same line with, **Hashemi, et al (2012)** who stated that, the nurses might have different types of fears that prevent them from reporting errors; as fear from legal issue, threats related to their job, fear about their financial status as decreasing their salaries or bonus, as well as fear of being blamed from the hospital administration and colleagues.Also, in the contrast with this finding,**Vrbnjak, et al (2016)** who stated that, several studies confirmed that, organizational barriers such as cultural blaming environment,the reporting system, and managerial behavior influence reporting of medication administration errors. Moreover, the majority of the participants revealed that, lack of receiving positive feedback from the head nurse could be a factor that affects their reporting about medication administration errors.In addition, focusing on finding problems and blaming them rather than finding the factors might lead to under-reporting of medication administration errors. This might happen because of the hospital administration do not show the staff reassurance and importance of reporting in case of error occurrence. These findings correspond with findings of **Mirzaee et al, (2014)**which indicated that, hospital administration related factors and the fear of consequences of reporting are important barriers that prevent reporting of medication administration errors. In addition, these findings in the same contrast with**Hashemi, et al (2012)**who reported that reluctance of the nurses toward reporting errors may be due to the various fears and threats felt by them and they feel lack of support from colleagues and hospital administration.

In addition, this study showed that, the majority of the participants stated that, the reporting system in the hospital cannot guarantee anonymity which reflects negatively on their intention to report about medication administration errors. This might result from their worry and fear from being blamed by their colleagues and hospital administration. This finding is against with **McCall, (2014)** who stated that, making the process of medication administration errorsanonymous did notincrease the total number of errors reported. Meanwhile, **Mi-Ae You et al (2015)** mentioned that, creating blame free cultural will encourage nurses to report any error.

V. Conclusion

Based on the results in the current study, it can be concluded that, the most common factors lead to under-reportingof medication administration errors are related to hospital management. As well as fear of the consequences from reporting are broad among the factors that make nurses do not report the errors if any.

VI. Recommendations

Based on the findings of current study, it is recommended by this study that the hospital administration should provide education to nurses, enhancing job security for nurses, design safe work environment for the nurses, create blame cultural free environment, as well as hospital administration should support and revising related process of error reporting, and if there is possibility to change some of them that, can help in decreasing the occurrence rate of medication administration errors, and encouraging nurses to report error if any.

Limitation

The nurses have too much worry to report actual causes for medication administration errors, which needed too much effort to convenes them to answer all questions.

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