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Contents

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Medication Error Based on Nurse Knowledge at Inpatient Unit of Surabaya Private Hospital

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ABSTRACT

Medication error is one of the factors that cause the incidence of medical error. The parties who were responsible for these cases are nurses. The purpose of this study is to describe the incidence of medication error based on the knowledge of nurses at the inpatient unit of Surabaya Private Hospital. This is an observational descriptive research. Based on the time of study this was included as cross sectional study. The respondents were 63 nurses. The data were collected by questionnaires and observational guidance. Data analysis was conducted by cross tabulation analysis. The results of this study are most of the respondents were in the age range of 20-40 years old. Most of the respondents were female. The last education of most of the respondents was Diploma-III. The most of respondents have worked for more than 10 years. The respondents who have good-knowledge are in Class 2 room, while the respondents who have poor-knowledge are in Kids room. In overall of the room, the knowledge levels of respondents are poor. The conclusion of this study is the incidences of medication error are more happening in the room with poor level of respondent's knowledge and fair level of respondent's knowledge.

Keywords: *medication error, knowledge, nurse, inpatient*

INTRODUCTION

Medication error is an incident that can be detrimental to patients which can actually be prevented. This medication error is the result of drug use, action, and treatment as long as the patient is handled by health personnel.[1]. Medication error itself is one of the common factors that can cause a medical error.[2]

These incidents are most common in hospitals. According to Kinninger (2003), about 7000 people were died annually due to the medication error. Another study conducted in United States, found that the incidence rate of medication error between 2-14% of the number of patients treated in hospital. This was happened because the wrong prescription is about 1-2% and it was causes losses to the patient. Another study says that about 7000 patients were died every year in United States due to medication errors. According to a recent report from the National Audit Commission Report on Patient Safety, medication error (7% of all medical error incidents) is the second most common factor of incidents that endanger to patients after a patient falls.[3] Based on the Rule of MOH RI Number 129/Menkes/SK/II/ 2008 on Minimum Service Standards of Hospital mentioned that the incidence of medication error should be 100% not exist or not happen. This means that in providing health services, medication error should not be happened at any.

This case of patient safety is also still found in Surabaya Private Hospital. The place of highest incidence of patient safety is in the inpatient unit. The increases were happened from 2016 to 2017 is from 24% to 33.8%. In period of January-March 2017, inpatient unit of Surabaya Private Hospital has the highest number that contributes the number of patient safety incident. While the most frequent patient safety incidents in period of January-March 2017 in the inpatient unit were the incidents of medication error-related, that is 78% of the total patient safety incidents at inpatient unit of Surabaya Private Hospital.

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Medication errors can happen in every stage of treatment. According to the National Patient Safety Agency 2004, medication error in the administration error stage is the type of error that gives the worst impact compared to other types of errors. These errors are also common. The party that has a role in this case is nurse. Nurse should be aware on drug delivery safely including safe doses, side effects of medication, alertness to drugs that have similarities of both name and appearance and the ability to educate patients and their families about medication.[5]

Based on these data, the research problem found is the incidence of medication error at Inpatient Unit of Surabaya Private Hospital by 78% in period from January to March 2017. Thus, this study aims to describe the incidence of medication error based on nurse knowledge at Inpatient Unit of Surabaya Private Hospital.

METHOD

This study is an observational descriptive research with the cross sectional approach. Samples of this study were 63 nurses. This research was conducted at inpatient unit of Surabaya Private Hospital and conducted in April - December 2017. Technique of data collection is conducted by questionnaire and observation for primary data. While secondary data was collected from report document of patient safety incident in period from January to December 2017. Data analysis is conducted descriptively.

RESULTS

Based on the data of the research results it can be seen that the characteristics of respondents based on age, gender, last education and length of working at Surabaya Private Hospital are as follows:

Table 1: Frequency Distribution of Respondent's Characteristics based on Age, Gender, Last Education and Length of Working

Respondent's Characteristics	Total	Percentage (%)
Age		
20-40 Years old	46	71.6
41-60 Years old	17	28.4
Total	63	100.0
Gender		
Man	6	9.0
Women	57	91.0
Total	63	100.0
Last education		
D-III	37	64.7
S.Kep.Ns	26	36.3
Total	63	100.0
Length of work		
<1 Year	2	3.0
1-5 Years	23	35.8
> 5-10 Years	3	6.0
> 10 Years	35	55.2
Total	67	100.0

Source: Primary Data, 2017

Based on Table 1, it can be seen that most of respondents are aged between 20-40 years as many as 46 respondents (71.6%). This range of ages is included in the early adult age category. Most of respondent's genders are female that was 91%. Most of last educations of respondents are DIII that was 56.7%. Most of respondents have been working in the inpatient unit of Surabaya Private Hospital for more than 10 years that is 55.2%.

Table 2: Frequency Distribution of Respondents' Knowledge about Medication Error and Drug Delivery in Each Room of Inpatient Unit of Surabaya Private Hospital, 2017

No.	Room	Nurse's Knowledge						Total	
		Poor		Fair		Good			
		N	%	n	%	N	%	n	%
1.	Class 1	2	15.4	5	38.5	6	46.2	13	100.0
2.	Class 2	1	10.0	3	30.0	6	60.0	10	100.0
3.	Class 3	5	54.5	1	9.1	4	36.4	10	100.0
4.	Class 3B	4	36.4	5	45.5	2	18.2	11	100.0
5.	Kids	6	60.0	1	10.0	3	30.0	10	100.0
6.	VIP	4	33.3	2	16.7	6	50.0	12	100.0
Total		20	34.4	17	25.3	27	40.3	63	100.0

Source: Primary Data, 2017

Based on Table 2, it can be seen that most of respondents are have good level of knowledge that are as many as 27 respondents (40.3%). Respondents who have good level of knowledge about medication error and drug delivery are in *Class 2* room. While respondents who have poor knowledge level related to medication error and drug delivery are in *Kids room.*

Results of research about score of respondent's knowledge on medication error and drug delivery that concluded based on each room are described in following table:

Table 3: Score of Respondent's Knowledge on Medication Error and Drug Delivery at Inpatient Unit of Surabaya Private Hospital, 2017

No.	Room	Score of Respondents' Knowledge	Category
1.	Class 1	76.2	Fair
2.	Class 2	80.9	Good
3.	Class 3	68.6	Poor
4.	Class 3B	66.1	Poor
5.	Kids	69.1	Poor
6.	VIP	77.7	Fair

Source: Primary Data, 2017

Based on Table 3, it can be seen that the room that has good level of knowledge is *Class 2*. There are two rooms that have fair level of knowledge, that are *Class 1* and VIP. While there are three rooms that have poor level of knowledge that are *Class 3*, *Class 3B* and *Class 2*. This is indicates that most of rooms in Inpatient Unit of Surabaya Private Hospital have poor level of respondent's knowledge about medication error and drug delivery.

Table 4: Recapitulation of Medication Error Incidents at Inpatient Unit of Surabaya Private Hospital Year of 2107

No.	Month	Recapitulation of Medication Error Incidents in Each Room					
		Class 1	Class 2	Class 3	Class 3 B	Kids	VIP
1.	January	2	0	1	1	3	1
2.	February	0	0	0	1	0	0
3.	March	1	0	0	2	3	1
4.	April	1	0	1	1	0	0
5.	May	1	0	1	0	1	1
6.	June	0	0	1	0	0	0
7.	July	0	0	0	1	0	0
8.	August	0	0	1	0	0	0
9.	September	0	0	0	1	0	0
10.	October	1	0	0	0	1	0
11.	November	0	0	0	0	1	0
12.	December	0	0	1	0	0	0
Total		6	0	6	7	9	3
Category		Happened	Not happened	Happened	Happened	Happened	Happened

Source: PMKP Committee of Surabaya Private Hospital, 2017

Table 4 shows that *Class 2* room is a room with no medication error during year of 2017. While in 5 other rooms there are incidences of medication error with a various number. It can be concluded that most of rooms in Inpatient Unit of Surabaya Private Hospital have medication error incidents during year of 2017.

Table 5: Cross tabulation between Respondent's Knowledge on Medication Error and Drug Delivery with Medication Error Incidents at Inpatient Unit

No.	Respondent's Knowledge	Medication Error Incidents in year of 2017				Total	
		Not happened		Happened			
		n	%	n	%	n	%
1.	Poor	0	0.0	3	100.0	3	100.0
2.	Fair	0	0.0	2	100.0	2	100.0
3.	Good	1	100.0	0	0.0	1	100.0

Source: Primary Data, 2017

Based on Table 5, it can be seen that the whole rooms with poor level of respondents' knowledge (100.0%) and the rooms with fair level of respondents' knowledge (100.0%) are the rooms which medication errors are happened. The room with good level of respondents' knowledge (100.0%) is the room which medication errors incidents are not happened. It can be concluded that the incidents of medication errors are more prevalent in the rooms with poor and fair level of respondents' knowledge on medication errors and drugs delivery.

DISCUSSION

Knowledge is the result of "know" that has happened after someone held a sensing on particular objects mainly through the eyes and ears.[6] If someone can answer questions shortly about particular fields fluently, both written and oral then it can be said that they knew some of these fields. A set of replied answers is called knowledge.

According to Hurlock in Jersild, *et.al* (1978), 11 human life spans, that are prenatal (from conception to birth), neonatal period (born to 2 weeks), infancy (2 weeks-2 years), early childhood (2-6 years), late childhood (6-10/11 years),puberty (10-12/13 years), early adolescence (13/14-17 years), late adolescence (17-21 years), early adulthood (21-40 years), middle age (40-60 years) and old age (60 years and over). So the respondents in this study are included on early adulthood category.[7]

The results of study indicate that most of respondents are have D-III educations. This means that respondents had fulfilled the requirements set in PERMENKES No.148/2010 on Nurse Practice Permit which stating that a nurse can doing nursing practices after obtaining Nurse Practice Permit and have minimum education of D-III on nursing.

Based on the results of study it is noted that most of respondent's length of working is more than 10 years. The longer a person working, the more experience he or she has, so that he or she has the skills to work. This is in accordance with Prabandari (2003) stated that the longer a person's length of working the higher the level of skill for the work that became his duty.[8] The supports of adequate capability and experience will demonstrate the quality of his work.

Based on the results of study it can be seen that the nurse's knowledge is still poor. Nurse's knowledge is very important. Knowledge is influenced by several factors, one of them is a person's education level. It can be said the higher level of person's education the better level of knowledge. The higher level of person's education, the easier one receives information and the more knowledgeable. If one's knowledge is poor, it will hinder his performance because it is difficult to accept newly introduced information and values.[9]

Comprehensive knowledge is very important for nurses. This is needed as the basis of any nursing action that was undertaken. If the nurse has adequate knowledge related to medication, then the nurses can take appropriate and safe medication to the patient. Likewise, the nurse's knowledge related to medication error, the higher level of nurse's knowledge then the identification of error in the service could be done before the error was happened to the patient.[10]

The research conducted has the results that from 3 rooms that have poor level of nurse's knowledge, the whole are rooms wherein medication error was happened. From 2 rooms that have fair level of nurse's knowledge, the whole are also rooms wherein medication error was happened. This means that the incidence of medication error is more prevalent in a room with poor level of nurse's knowledge.

Nurses with the poor knowledge will more often to make mistakes when performing health services. This is in line with the study conducted by Amik (2014) which explains that nurses with the better levels of knowledge, will make a few mistakes when taking medication and more able to identify errors before they happened to the patients.[11] Another study that was in line with this study is study conducted by Budiharjo (2017) which states that the better the level of nurse's knowledge the less the incidence of medication errors that happened in the room.[12]

CONCLUSION

Based on the discussion it can be seen that the incidence of medication error was happened in the room of Inpatient Unit of Surabaya Private Hospital. In general, the nurse's knowledge in the room of inpatient unit is still poor. Medication error was happened in a room with poor level of nurse's knowledge and fair level of nurse's knowledge.

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