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Relationship Between Nurses' Knowledge Level and The Implementation of Drug Administration (7 Corrections) In The Inpatient Ward

Citra Juli Warni Sinaga^{1*}, Afnijar Wahyu¹¹Bachelor of Nursing Study Program, Murni Teguh University***Correspondence:**

Citra Juli Warni Sinaga

citra2021@gmail.com**Abstract**

Background: Patient safety is the main reference and principle in the health service process in a health provider institution. The world health organization (WHO) in 2020 reported that in several countries there were cases of as many as 70% of medication errors that caused permanent disability in patients. Medication errors also often occur in the cause of permanent disability in hospitals. Errors in drug administration in Indonesia were ranked first (24.9%) of the top 10 reported incidents. The aim of this research is to determine the relationship between nurses' knowledge about administering medication and the 7 principles of correct medication.

Methods: The samples taken were 46 respondents who were obtained using a total sampling technique with a cross sectional approach. The instrument used is a questionnaire. The data in this study were processed using the chi-square test with a significance level of $P = 0.005$.

Results: From the study, it was found that there was a significant relationship between nurses' knowledge about drug administration and application of the 7 correct principles of medicine ($P = 0.006$).

Conclusions: The recommended advice for nurses and hospitals is to seek as much information as possible about the application of the 7 drug principles so that patient safety is guaranteed.

Keywords: nurses, knowledge and application of the 7 correct administration of medication

Introduction

World Health Organization (WHO) in 2020 reported that several countries had cases of as many as 70% of medication errors that caused permanent disability in patients. Medication errors also often occur in the treatment process, especially in hospitals. Errors in administering medication in Indonesia ranked first (24.9%) of the top 10 reported incidents. The seven principles of correct drug administration are one of the guidelines that apply in hospitals to evaluate and prevent errors in administering drugs to patients (CRNBC, 2015). Research

conducted by Elliot & Liu (2010) stated that each principle of drug administration has the potential for error, so it is necessary to evaluate the principles of drug administration to prevent an increase in medication errors and improve patient safety. The three evaluations are benchmarks for nurses' efforts to prevent deviant behavior from their roles and increase the success of implementing the 7 principles of correct drug administration in accordance with God's teachings in carrying out the mandate.

Full list of author information available at the end of the article.

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The results of a preliminary study conducted by researchers for 2 days were obtained in the Inpatient Room of Murni Teguh Sudirman Hospital, Jakarta. Researchers found that 6 out of 10 patients stated that they did not understand the method, dosage, type, time, energy and were not identified or clarified regarding their identity. patients before undergoing treatment procedures. Meanwhile, the results of observations conducted by 4 researchers on 7 nurses showed a gap between the implementation and application of the 7 principles of correct drug administration by nurses, such as not rechecking the suitability of the drug for the patient. receiving the drug, the time of drug administration was not in accordance with the doctor's recommendations, and lack of documentation after drug administration.

The implementation of the 7 principles of correct drug administration by nurses is very important in an effort to reduce the negative impact of patient medication errors that slow down the patient's healing process and the possibility of medication errors made by nurses (Adam & Koch, 2010). Nurses are important health workers who have a position to assess patients as a whole, provide therapy and treatment, teach patients about the best way to deal with therapy to ensure the most beneficial results and evaluate the effectiveness of therapy (Amy, 2011). Drug administration is one of the most frequently performed nursing procedures. It is very important to be careful when administering drugs to get the maximum drug effect. Under or over doses, improper administration techniques or careless clinical identification can cause various complications including death (Smith, 2010).

The hypothesis in this study is There is a relationship between the level of knowledge of nurses and the implementation of drug administration (7 Correct) in the inpatient ward of Murni Teguh Sudirman Hospital, Jakarta

Methods

The type of research used is by using a quantitative research type with a correlational research type, namely analyzing the dynamics of the correlation of the relationship between nurses' knowledge and the implementation of drug administration (7 correct) at Murni Teguh Sudirman Hospital, Jakarta. This study uses a cross-sectional design, namely a type of research that emphasizes the time of measuring independent and dependent variable data only once, at one time. The sampling technique uses a non-probability sampling technique, namely total sampling.

Total sampling is a sample that represents the entire population. The number of samples in this study was 46 respondents. This study was conducted on June 30 - July 20, 2024 in the Inpatient Room of Murni Teguh Sudirman Hospital, Jakarta. In this study, the researcher used a data collection technique through a questionnaire.

Data analysis in this study used the chi square test to see the relationship between the level of nurses' knowledge and the implementation of drug administration (7 Correct) in the inpatient ward of Murni Teguh Sudirman Hospital, Jakarta.

Results

This study was conducted on June 30 - July 20, 2024 in the inpatient room of Murni Teguh Sudirman Hospital, Jakarta. The respondents in this study totaled 46 respondents, namely all nurses in the inpatient room of Murni Teguh Sudirman Hospital, Jakarta. The results of this study were analyzed based on univariate analysis to see the characteristics of the research respondents and bivariate analysis to see the relationship between each research variable.

Univariate Analysis

Table 4.1 Frequency distribution of respondent characteristics based on education level

Education	Frequency	Percentage
D3	13	28.3
S1/Nurse	33	71.7
Total	46	100

The results of the analysis showed that the majority of respondents were educated S1/Nurse totaling 33 respondents (71.7%), while the number of respondents with D3 education was 13 (28.3%).

Table 4.2 Frequency distribution of respondent characteristics based on age

Age	Frequency	Percentage
20-25	10	21.7
26-30	16	34.8
31-35	7	15.2
36-40	6	13
41-45	2	4.3
>45	5	10.9
Total	46	100

The results of the analysis showed that the largest number of respondents were aged 26-30, totaling 16 respondents (34.8%), while the lowest number of respondents were aged 41-45, totaling 2 (4.3%).



**Table 4.3 Frequency distribution of Characteristics based on work experience.**

Length of working Work	Frequency	Percentage
0-5 years	11	23.9
6-10 years	20	43.5
11-15 Years	6	13.0
16-20 years	4	8.7
21-25 years	2	4.3
>26 years	3	6.5
Total	46	100

The results of the analysis showed that the largest number of respondents had a working period of 6-10 years, amounting to 20 respondents (43.5% %), while the number of respondents with the lowest working period was 21-25 years, amounting to 2 respondents (4.3%).

Table 4.4 Frequency distribution of respondent characteristics based on information sources

Patient care training	Frequency	Percentage
Already training	36	78.3
No training yet	10	21.7
Total	46	100

The results of the analysis showed that the majority of respondents had received patient safety training, totaling 36 respondents (78.3%), while the number of respondents who had not received patient safety training was 10 respondents (21.7%).

Table 4.5 Overview level of knowledge of nurses in the inpatient ward

Level of knowledge	Frequency	Percentage
Good	26	56.5
Enough	14	30.4
Not enough	6	13
Total	46	100

The results of the analysis showed that the largest number of respondents had a good level of knowledge, namely 26 respondents (56.5%), while the lowest number of respondents had poor knowledge, namely 6 respondents (13%).

Table 4.6 Frequency distribution Implementation of drug administration (7 Correct)

Implementation	Frequency	Percentage
Implemented	30	65.2
Not yet implemented	16	34.8
Total	46	100

Based on table 4.6, it shows that the frequency distribution in the inpatient room of Murni Teguh Sudirman Hospital, Jakarta. The majority of drug administration (7 correct) has been implemented by 30 respondents (65.2%), while those who did not implement the 7 correct principles of drug administration were 16 respondents (34.8%).

Bivariate Analysis

Table 4.7 Relationship between the level of nurses' knowledge and the implementation of drug administration (7 correct) on patient safety in the inpatient ward

Level of Knownl ge	Implementation of drug administration						P- Valu e
	Implemente d		Not yet impleme nted		Amount		
	N	%	N	%	N	%	
Good	22	84.6	4	50	26	100	0.006
Enough	6	42.9	8	57.1	14	100	
Not enough	2	33.3	4	66.7	6	100	

Based on the results of the research analysis of the relationship between nurses' knowledge and compliance with the seven correct principles of drug administration that has been carried out in Pure Teguh Sudirman Hospital Jakarta. Of the 46 respondents, it was shown that the majority of nurses who had good knowledge who applied the 7 correct principles in administering medication were 22 respondents (84.6%) and nurses with sufficient knowledge who applied the 7 correct principles in administering medication were also 6 respondents (42.9%). The results of the bivariate correlation test used in this study used the Chi Square Test which aims to see the relationship between the level of nurses' knowledge and the implementation of drug administration (7 correct) in the inpatient ward of Murni Teguh Sudirman Hospital, Jakarta. Based on the results of the statistical test in table 4.7 using the chi square test, the p value = 0.006 was obtained where the α value = 0.05. This shows that the p value (0.006) < α (0.05), then the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted, this shows that there is a relationship between level of knowledge of nurses in the implementation of drug administration (7 correct) in the inpatient ward of Murni Teguh Sudirman Hospital, Jakarta in 2024.

Discussion



Frequency distribution of respondent characteristics based on education level

The results of the analysis showed that the majority of respondents had a Bachelor's degree/Nursing, totaling 33 respondents (71.7%), while the number of respondents with a Diploma 3 education was 13 (28.3%). The results of this study are in line with research conducted by Muhsinin (2023) on the Relationship between Length of Work and Level of Education with the Implementation of Patient Safety Targets, the results of the study obtained 40 respondents, 15 people (37.5%) had a Diploma III nursing education, 6 people (15%) had a Bachelor's degree in Nursing and 19 people (47.5%) had a Bachelor's degree in Nursing + Ners. According to Nusalam (2012) the education achieved by nurses can be used as an indicator to measure the level of community welfare and also plays a role in reducing morbidity. With the higher level of education, a person can help reduce/reduce the high morbidity rate in patients. According to the researcher's assumption, the higher the level of education of nurses, the better the nurse's ability to implement the principles of drug administration. This is because a person's level of education can be a measure of the extent to which a nurse understands the procedures and principles that apply within the scope of their work.

Frequency distribution of respondent characteristics based on age

The results of the analysis showed that the largest number of respondents were aged 26-30, totaling 16 respondents (34.8%), while the lowest number of respondents were aged 41-45, totaling 2 (4.3%). This research is in line with research conducted by Awliyawati (2015) The Relationship between Nurse Characteristics and Compliance in Implementing Patient Safety Guidelines in the Inpatient Installation of Faisal Islamic Hospital, Makassar, the results of this study showed that the majority of nurses were aged 20-40 years, amounting to 38 (80.9%). According to Hurlock (quoted in Lestari, 2018), age is a person's age calculated from birth to his/her birthday. The older a person is, the more mature the level of maturity and strength of a person in thinking and working. In terms of public trust, a more mature person is more trusted than a less mature person. According to the researcher's assumption, the older a person is, the more

mature their thinking and working will be, making it easier to carry out their work.

Frequency distribution of respondent characteristics based on information/training sources

The results of the analysis showed that the majority of respondents had received patient safety training, totaling 36 respondents (78.3%), while the number of respondents who had not received patient safety training was 10 respondents (21.7%). According to Lestari (2018) One of the factors that can facilitate individuals in gaining knowledge is by accessing various sources of information in various media. Current technological developments make it easier for someone to access almost all the information they need. Someone who has more sources of information will have broader knowledge. In general, the easier it is to obtain information, the faster a person will gain new knowledge. According to the researcher's assumption, the source of information is one of the most important factors for nurses. The more information is obtained, the better it will be. changing the mindset and actions of nurses, so that nurses are more obedient and more careful in carrying out nursing actions.

The level of knowledge of nurses in the inpatient ward of Murni Teguh Sudirman Hospital, Jakarta

The results of the analysis showed that the most respondents had a good level of knowledge, amounting to 26 respondents (56.5%), while the lowest number of respondents had poor knowledge, amounting to 6 respondents (13%). This study is in line with Khadijah's research (2019) with the results of the study that from Of the 113 respondents who had good knowledge, 107 respondents (94.9%) and 6 respondents (15.8%) had poor knowledge. The level of education can influence the nurse's knowledge about the implementation of the "Seven Right" of administering medication to patients. This shows that the higher the level of knowledge of the nurse, the better the level of understanding of the nurse about the implementation of the "Seven Right" of administering medication. The results of this study indicate that most nurses have an average education level of D III with knowledge about the implementation of the "Seven Right" of administering medication in





the category of quite correct. This shows that not all nurses have a low level of knowledge and understanding regarding the ability to administer types of medication to patients, but need to improve understanding, knowledge and commitment in working to achieve the results expected by the hospital (Nursalam, 2012). According to the researcher's assumption, nurses' knowledge about implementing the "Seven Right" of drug administration must be further improved, because the principle of the seven right of drug administration will support the success of nurses in administering types of drugs to patients.

Implementation of drug administration

The results of the data analysis showed that the frequency distribution in the inpatient room of Murni Teguh Sudirman Hospital, Jakarta, the majority of drug applications (7 correct) had been implemented by 30 respondents (65.2%), while those who did not implement the application of the 7 correct drug administration principle were 16 respondents (34.8%). This study is in line with research conducted by Tirza (2023) which found that most respondents who were compliant with the actions of 20 nurses (52.6%), while nurses who were less compliant with the actions of 18 nurses (47.4%). Nurses are important health workers who are in a position to assess patients as a whole, provide therapy and medication, teach patients about the best way to deal with therapy in order to ensure the most beneficial results and evaluate the effectiveness of therapy (Amy, 2011). Medication administration is not merely a mechanical task that must be carried out in full compliance with the written prescription of the doctor (now an independent prescriber or supplementary). Medication administration requires professional consideration and judgment. Nurses as implementers in administering medication may only administer medication according to the prescription given by the doctor and recheck if there is any doubt about the instruction. According to the researcher's assumption, most have implemented the 7 correct principles of drug administration because most nurses have received patient safety training, but there are still some who have not implemented the 7 correct principles so that it still needs to be improved.

The relationship between knowledge and the application of the 7 correct principles

The results of the statistical test in table 4.7 using the chi square test obtained a p value = 0.006 where the α value = 0.05. This shows that the p value (0.000) < α (0.05), then the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted, this shows that there is a relationship between level of knowledge of nurses in the implementation of drug administration (7 correct) towards patient safety in the inpatient ward of Murni Teguh Sudirman Hospital, Jakarta in 2024. This study is in line with Moza's study (2024) at Rukmitban Hospital 02.09.04 Kerinci, the results of statistical analysis with the chi square test obtained a p-value of 0.017 with a significance level of 95% ($\alpha = 0.05$). This shows that there is a relationship between nurses' knowledge of drug administration and the application of the six correct principles at Rumkitban Hospital 02.04.09 Kerinci. According to Karch's theory, MA (2010) the application of the principle aims to improve safety in drug administration can harm patients, therefore nurses must provide the right dose to prevent adverse effects and improve safety. And according to Efendi & Makhfudli's theory (2009) knowledge generally comes from sensing that occurs through the five human senses, namely, sight, smell, touch and feeling. Most human knowledge is obtained by the eyes and ears. According to Harmiady (2014) in his research, there are three factors that influence nurses in administering drugs, including: Nurses' knowledge level.

Nurses with a high level of knowledge tend to be able to implement the correct principles in administering drugs correctly compared to those with poor knowledge. Someone who has good knowledge will have good manners and practice that knowledge. Without knowledge, a person has no basis for making decisions and determining actions for problems faced by patients. Knowledge is needed to obtain information, for example, things that support taking the right action so that it can improve the patient's quality of life. Knowledge can influence someone in decision making so that it will later motivate nurses to act and participate in improving patient health in this case providing the right medication. Researchers assume that nurses' knowledge of drug administration by applying the principle of 7 correct drug administration carried out by nurses is influenced by nurses' knowledge of drug administration and is also influenced by long work experience, teamwork and thoroughness





in administering drugs to patients, and how to improve knowledge about drug administration by applying drug principles.

Conclusion

Nurses' knowledge in implementing the seven correct principles of drug administration is mostly in the Good category. Nurses' compliance in implementing the seven correct principles of drug administration is mostly in the applied category. There is a relationship between knowledge and the application of the seven rights principle in administering medication at Murni Teguh Sudirman Hospital, Jakarta.

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