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The Seven Right Principles of Medication Administration by Nurses to Patients in the Aceh Mental Hospital, Indonesia

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Abstract

Patient safety incidents due to ineffective medication administration management by nurses are an essential issue. The prevalence of medication errors in Indonesia is ranked first, reaching 24.8% of the top 10 causes of patient safety incidents in public hospitals or mental hospitals. This study aimed to determine the Application of the Seven Right Principles of medication Administration by Nurses to Patients at the Aceh Mental Hospital Indonesia. This type of quantitative research is an analytic survey with a cross-sectional study design. The number of samples is 130 respondents, using the total sampling technique. Data collection tool using a questionnaire, data analysis using descriptive statistical tests. The results of the study show that in the application of the seven right principles of

medication administration by nurses to patients at the Aceh Mental Hospital Indonesia, all principles are in the right category, namely, right patient 126 respondents (96.9%), right drug 101 respondents (77.7%), right dose 98 respondents (75.4%), right route 127 respondents (97.7%), right time 126 respondents (96.9%), right documentation 128 respondents (98.5%), and right information 127 respondents (97.7%). It can be concluded that nurses at the Aceh Psychiatric Hospital have applied the seven right principles of medication administration. Still, attention is needed for nurses who have not fully implemented them correctly. It is hoped that the management will always supervise and provide training on the seven right principles of medication administration.

Keywords: Nurse, Principle Seven Right, Drug Administration

1. Introduction

Nurses are hospital health workers who play an essential role in achieving health development goals. The success of health services depends on the participation of nurses in providing quality nursing care for patients because of the presence of nurses on duty 24 hours serving patients and the number of nurses who dominate health workers in hospitals, which is around 40-60%. (Natasia & Kurniawati, 2015). Quality nursing care for patients requires nurse compliance in implementing patient safety target procedures. (Mahfudhah & Mayasari, 2018) ^[9].

According to the Regulation of the Minister of Health of the Republic of Indonesia Number 11 of 2017, six patient safety goals must be complied with in providing health services and nursing care. The six goals of patient safety are correctly identifying patients, promoting effective communication, increasing the safety of drugs to watch out for, ensuring the correct surgical site for both procedures and accurate patient surgery, reducing the risk of infection due to health care, and reduce the risk of patient injury from falls.

The accuracy of drug administration is one of the goals of patient safety and a form of nurse performance, although in this case, it is a form of delegation task; this activity is carried out more often by nurses and even becomes a nurse's mandatory duty compared to other roles and functions of nurses. The safety of medication administration is a problem that cannot be ignored by health service providers, including doctors, nurses, pharmacists, and hospital leaders. Nurses, as officers who directly provide services to patients, are expected to be able to develop and maintain a safe treatment practice system to ensure patients get the best service and protection. (Siregar, 2013) ^[19].

A drug is a substance that can affect life processes and is used to prevent, treat, and diagnose diseases or disorders that cause specific conditions (Prabowo, 2021) ^[14]. The potential for patient safety incidents due to ineffective medication administration management by nurses is an important issue. Based on national data, the prevalence of medication errors in Indonesia is ranked first, reaching 24.8% of the top ten causes of patient safety incidents in hospitals (PERSI quoted from Gloria *et al.*, 2017) ^[5]. Another study stated that 11% of medication errors in hospitals were related to errors when handing drugs to patients, either in

the form of wrong doses or drugs (Oktarlina & Wafiyatunisa, 2017) ^[11].

Reports from the Hospital Patient Safety Institution (HPSI) of private hospitals in Indonesia during the first quarter of the January-March 2020 period found that the management of high alert type patient drugs in the inpatient unit reached 85%, double check compliance when administering medications was 96%, the accuracy of online prescription writing in the Hospital Information and Management System (HIMS) is 97%, monitoring compliance in administering high-concentrate fluid therapy is 73%, and compliance with high alert drug labeling is 77%, with an achievement target of 100% (Cahyaningtyas *et al.*, 2020) ^[4]. The research results at the Cut Nyak Dhien Meulaboh Regional General Hospital, West Aceh, Indonesia, revealed an error in medication administration caused by the nurse's negligence when administering the drug, which caused the death of two patients. At the beginning of the study, cases were also found that were not timely changing intravenous fluids at the inpatient unit (Tania *et al.*, 2021) ^[21].

Medication errors also occur in mental hospitals. Based on the monthly nursing audit report at the Cilabar Mental Hospital, several medication errors were found, such as using the wrong drug, using an inappropriate route, using the wrong drug for past administration, and using medication that was not swallowed by the patient (Umoh *et al.*, 2021) ^[22]. Likewise, research at the Mutiara Sukma Psychiatric Hospital, West Nusa Tenggara Province, found an incidence of drug-related problems (DRPs) of 89.5% with 117 incidents. Medication administration errors made by nurses in the inpatient ward, namely the wrong time of administration or dosing intervals, were 1.7%, the drug dose was too low, as much as 8.5%, the adverse drug effects that occurred were 76.9%, the drug was not right according to guidelines/formalism as much as 0.9%, the duration of treatment is too short and not maximal as much as 0.9%, drugs without indications are as much as 10.3% which cause side effects namely resistance to antibiotics, nausea, vomiting, hypersensitivity (Utami *et al.*, 2020).

The nurse is responsible for patient safety in administering therapy. Nurses in psychiatric nursing services have a massive responsibility to implement modality therapy and help with psychopharmaceutical drugs. In addition, nurses also need to know the concept of psychopharmaceuticals related to medicines for patients with mental disorders (Nurhalimah, 2016). Therefore, in giving treatment, a nurse in a psychiatric hospital must comply with the seven right principles of medication administration, namely, the right patient, the right drug, the right dose, the right time, the right route, the right documentation, and the right information (Lestari, 2016) ^[8]. Thus, nurses are required to be able to work professionally and uphold professional ethics in carrying out their obligations to serve with compassion (Putri, 2016) ^[15], including medication administration procedures based on the seven right principles of medication administration, which are the activities of nurses in preparing drugs to be given to patients. Patients to prevent medication errors that patients receive (Nurinasari, 2014) ^[10].

Based on observations made at the Aceh Psychiatric Hospital Indonesia, some nurses did not consult with the doctor when administering the drug, such as asking for the generic name of the drug or the drug's contents. Some nurses also do not wait for the patient to finish taking the medicine,

which can lead to errors in giving the medication or the patient not taking it. According to the head of nursing at the psychiatric hospital, there has never been a study related to cases of medication administration. However, several cases have occurred, such as allergic reactions from the drugs given, because no more in-depth analysis was carried out regarding the patient's medical history.

Based on the description above, research on the role of nurses in applying the seven right principles of medication administration to patients at the Aceh Mental Hospital Indonesia needs to be carried out.

2. Materials and Methods

This type of quantitative research is an analytic survey with a cross-sectional study design. The data collection tool used a questionnaire of seven correct principles of drug administration consisting of 6 statements in the form of a checklist and 20 statements in the form of a dichotomous choice; the results of the validity test of the questionnaire were 0.649-0.935 and reliability $0.968 \geq 0.60$. The collection of research data was carried out after obtaining written permission from the management of the Aceh Mental Hospital and having passed the research ethical from the Research Ethics Committee of the Faculty of Nursing, Universitas Syiah Kuala Banda Aceh, with document number 111131240123 on February 6, 2023. Data was collected from March 14 to 24, 2023, with a total sample of 130 respondents using an entire sampling technique. Questionnaires were directly distributed to respondents after the researcher first provided information in the form of an explanation of the purpose, benefits, confidentiality of data, and research procedures. Next, the researcher asked about the respondent's willingness to participate voluntarily or not in the study by signing an informed consent form without writing their name. Furthermore, the respondents filled out the questionnaire, lasting approximately 45 minutes. After filling out all the questionnaires, the researcher rechecked the completeness and correctness of the filling, and then the researcher terminated meet with the respondent. Data analysis used descriptive statistical tests with nominal and ordinal measuring scales and presented in frequency and percentage values.

3. Research Result and Discussion

3.1 Results

The results of the research on the characteristics of the respondents are presented in Table 1, which shows that most of the nurses working at the Aceh Mental Hospital Indonesia were aged 36-45 years was 64 respondents (49.2%), female sex was 87 respondents (66.9%), nurse's profession last education was 94 respondents (72.9%), civil servant employment status was 86 respondents (66.2%), the most years of service more than ten years was 79 respondents (60.8%), and 123 respondents (94.6%) had attended patient safety training.

Table 1: Frequency Distribution of Respondents' Characteristics (n=130)

| Characteristics | F | % |
|-----------------|----|------|
| Age: | | |
| 17-25 years | 3 | 2.3 |
| 26-35 years | 41 | 31.5 |
| 36-45 years | 64 | 49.2 |
| 46-55 years | 21 | 16.2 |

| | | |
|--------------------------|-----|------|
| 56-65 years | 1 | 8 |
| Gender: | | |
| Male | 43 | 33.1 |
| Female | 87 | 66.9 |
| Education: | | |
| D-III of Nursing | 57 | 43.8 |
| D-IV of Nursing | 1 | 8 |
| Nurse Profession | 70 | 53.8 |
| Master in Nursing | 2 | 1.5 |
| Employment status: | | |
| Civil Servant | 86 | 66.2 |
| Non Civil Servants | 44 | 33.8 |
| Years of service: | | |
| <6 years | 37 | 28 |
| 6-10 years | 14 | 10.8 |
| >10 years | 79 | 60.8 |
| Patient Safety Training: | | |
| yes | 123 | 94.6 |
| No | 7 | 5.4 |

Furthermore, the results of the research on the application of the seven right principles of medication administration are presented in Table 2 below:

Table 2: Frequency Distribution of the Seven Right Principles of Medication Administration (n=130)

| The Seven Right Principles of Medication Administration | F | % |
|---|-----|------|
| The right patient: | | |
| Right | 126 | 96.9 |
| Less True | 4 | 3.1 |
| The right drug: | | |
| Right | 101 | 77.7 |
| Less True | 29 | 22.3 |
| The right dosage: | | |
| Right | 98 | 75.4 |
| Less True | 32 | 24.6 |
| The right route: | | |
| Right | 127 | 97.7 |
| Less True | 3 | 2.3 |
| The right time: | | |
| Right | 126 | 96.9 |
| Less True | 4 | 3.1 |
| The right documentation: | | |
| Right | 128 | 98.5 |
| Less True | 4 | 1.5 |
| The right information: | | |
| Right | 127 | 97.7 |
| Less True | 3 | 2.3 |

Table 2 shows that in the application of the seven right principles of medication administration by nurses at the Aceh Mental Hospital Indonesia, all principles are in the right category, including; 126 respondents (96.9%) right patients, 101 respondents (77.7%) right drug, 98 respondents (75.4%) right dosage, 127 respondents (97.7%) right route, 126 respondents (96.9%) right time, 128 respondents (98.5%) right documentation, and 127 respondents (97.7%) right information.

3.2 Discussion

3.2.1 The Right Patient Principles

The right patient principle is an action performed by the nurse to identify the patient so that the drug given is right for the intended patient, including the patient's face, medical

record number, barcode bracelet, or telephone number. It is not recommended to use room numbers or patient complaints as identification (Potter *et al.*, 2021) ^[13].

The results of this study indicate that the application of the patient's right principles in administering medication to patients by nurses at the Aceh Mental Hospital Indonesia is in the right category of as many as 126 respondents (96.9%) and the less true category of as many four respondents (3.1%). These results are by research conducted by Basri and Purnamasari (2021) ^[3], which showed the right application of patient identification according to the standard of 91.5% and not the standard of 8.5%. Likewise, Mahfudhah and Mayasari's (2018) ^[9] research showed that 100% of nurses directly asked the patient's name to the patient or his family before administering the medication. Also, look at the barcode bracelet on the patient's hand; this is done to give the drug to the right patient.

However, in this study, it was found that 3.1% of respondents in the less true category interpreted the principle of the right patient, where the nurse did not see the patient's medical record number because the nurse was used to only seeing the patient's name and photo so that the medical record number was often forgotten.

The patient's medical record number is one of the most accurate data because each patient's medical record number must differ, while the names may have similarities. Therefore, the right patient is an important thing that must be done in administering the medication. The correct examination of the patient by looking at the patient's identity before administering the drug will reduce the occurrence of errors in medication administration which can be fatal for the patient.

3.2.2 The Right Drug Principles

The right drug principle is an action a nurse takes as a guide to the treatment needed for each drug given to the patient by paying attention to several aspects (Lestari, 2016) ^[8].

The study results showed that the application of the right drug principles in administering medication by nurses at the Aceh Mental Hospital Indonesia was in the right category by 101 respondents (77.7%) and the less true category by 29 respondents (22.3%).

The results of this study are those carried out by Mahfudhah and Mayasari (2018) ^[9], in which 100% of nurses re-checked drug labels by checking drug orders prescribed by doctors before being given to patients. Research conducted by Sandramustika *et al.* (2008) ^[17] showed that 96.67% of nurses checked the names on drug labels before giving injections to patients to avoid mistakes and that 66.7% checked the form of ampoules/ medicine vials and the color of the liquid/drug to be given to the patient, and 53.3% checked the expiration date on the drug. Likewise, in research conducted by Stephanie, Dewanto, and Widijati (2015) ^[20], the results of drug identification showed that as many as 86.5% of nurses carried out the process according to standard operating procedures for drug identification, namely reading the drug name, preparation, and drug expiration date before the drug was given in patients.

However, in this study, it was also known that as many as 29 respondents (22.3%) were in the less true category of the right drug principles administration medication. It is known that the nurse did not check and ask the doctor for the generic name and drug content. Some of the other nurses also did not match the drug labels at least three times, it is

possible that the nurses only checked once, and it could be that the drugs given were used to being provided by nurses and the nurses had memorized the type of drug. Therefore, it is very important to apply the right drug principle before the drug is given to the patient, such as checking the drug label at least three times, looking at the drug order, asking the doctor for the generic name or drug content, and checking the completeness of the drug use order. This is one form of prevention of errors in drug administration. The nursing implications are first to check whether the treatment order is complete and valid. If the order is incomplete or invalid, notify the nurse or doctor. Know why the patient received the therapy, and lastly, see the label at least thrice (Lestari, 2016)^[8].

3.2.3 The Right Dosage Principles

The principle of the right dosage is an action taken by the nurse to ensure the doctor prescribes the dose given to the patient (Lestari, 2016)^[8].

Based on the study results, 98 respondents (75.4%) were in the right category in the right dosage, and 32 respondents (24.6%) were in the less true category in administering medication to patients by nurses at the Aceh Mental Hospital Indonesia.

Another study by Anggraini and Fatimah (2015)^[2] showed that 94.1% of nurses applied the right dosage principle correctly. When administering the right drug, the dose requires high accuracy by the nurse in its implementation so that the results are as expected. The right dose before giving the medication, the nurse must first check the dose. If the nurse is in doubt, you should consult again with the doctor who wrote the prescription or the pharmacist. Before being given to patients, nurses must have basic knowledge of ratios and proportions to calculate the right drug dose. If in doubt, the drug dose must be recalculated and checked by another nurse (Lestari, 2016)^[8].

In this study, it was also known that as many as 32 respondents (24.6%) were in the less true category in the right dosage principle, such as not calculating the drug dose to be given to the patient, the nurse assumed the doctor or pharmacist had calculated the drug dose, but the nurse should have recalculated medication dosage to prevent errors. Therefore, in applying the right dosage, it is very important to be used by nurses to contain errors in medication administration so that the drug is not more than or less than the proper dose. However, research conducted by Kane-Gill, Jacobi, and Rothschild (2010)^[6] showed that the five most common drug administration errors were wrong doses.

3.2.4 The Right Route Principles

The principle of the right route is the nurse's action in ensuring the route of drug administration is by the type of drug to be given and by the doctor's instructions (Potter *et al.*, 2021)^[13]. Medication administration can be provided through several or different routes depending on the patient's condition. Factors determining the best route are the patient's general condition, the desired speed of response, the chemical and physical properties of the drug, and the desired site of action. Medications can be given in several ways, such as oral, sublingual, parenteral, topical, rectal, and inhalation (Lestari, 2016)^[8].

Based on the results of the study, it was shown that the application of the correct principles of the route in

medication administration by nurses at the Aceh Psychiatric Hospital was in the right category with 127 respondents (97.7%) and in the less true category with three respondents (2.3%). The results of this study align with those conducted by Setianingsih and Septiyana (2020)^[18] in applying the exact method or route of medication administration. 98.4% of nurses had checked the technique on the packaging and route.

This study also showed that as many as three respondents (2.3%) were in the wrong category on the principle of the right route. Not assessing the patient's ability to take the drug because there has been a previous order related to the way to be given to the patient, and there is also the possibility that the patient's condition is less stable, making it difficult for nurses to assess the patient's ability to take the drug. Recent evidence shows that drug administration errors often occur due to the wrong route (Potter *et al.*, 2021)^[13]. Therefore, in applying the principle of the right way, nurses must be careful when determining which courses and types of drugs should be given to patients, and nurses must also ensure that patients take the drugs correctly until they are finished.

3.2.5 The Right Time Principles

The principle of the right time is the nurse's action in ensuring that the drug to be given is what has been prescribed (Lestari, 2016)^[8].

Based on the research results on applying the correct time principle in administering drugs by nurses at the Aceh Mental Hospital Indonesia, 126 respondents (96.9%) were in the right category, and four respondents (3.1%) were in the less true category.

The research results are from research conducted by Setianingsih and Septiyani (2020)^[18]. As many as 97.6% of nurses have checked the drug expiration date according to the principle of being on time. However, in this study, it was found that four respondents (3.1%) did not check the expiration date and check the patient's therapy schedule because they assumed that the drug given was the latest year's expenditure so that nurses did not need to re-check the drug's expiration date. Therefore, in applying the principle of the right time, nurses must always ensure the schedule for administering medications to patients and see the expiration date.

According to research conducted by Kuntarti (2005)^[1], the level of the best application of the two correct principles of drug administration is timely, with an application rate of 37.0% in the high category and 63.0% in the medium category.

The principle of correct timing of correct drug administration is the time at which the prescribed drug should be administered. The daily dose of the drug is given at certain times, such as twice a day, three times a day, four times a day, every six hours, or only as needed so that plasma drug levels can be maintained. If the drug has a long half-life, then the drug is given once a day. Drugs with a short half-life are offered several times a day at intervals. Several drugs must be given before eating; others are provided at mealtime, with food, or after eating (Lestari, 2016)^[8]. However, each institution has a different schedule as recommended for drugs ordered at the right intervals. Healthcare providers often give specific instructions about when to give medications. Give priority to time-crisis drugs that must work and be given at certain times (Potter *et al.*,

2021)^[13].

3.2.6 The Right Documentation Principles

The right principle of documentation is the nurse's action in writing information related to patient data as a patient care plan correctly and correctly (Lestari, 2016)^[8].

Documentation is a method for communicating information related to health care management, including medication administration—documentation in writing and legal recording of specific activities/activities. Nurses usually document patients' health information, including assessment data, diagnoses, planning, implementation, and evaluation of nursing (Carpenito, 1998, quoted from Lestari, 2016)^[8].

The results showed that nurses' application of the right documentation principle in medication administration at the Aceh Psychiatric Hospital Indonesia was in the right category by 128 respondents (98.5%) and less true by two respondents (1.5%). In this study, documentation is indeed the principle with the minor errors because nurses consistently record each patient's data; when the number of patients is busy, and also the patient's condition is unstable so the nurse must record every data and the patient's condition so that errors do not occur. In applying the correct principle of documentation, nurses must immediately record all patient information while administering drugs and not delay recording related patient information to prevent errors during documentation if important things are forgotten to be recorded.

This research is in line with a study conducted by Setianingsih and Septiyani (2020)^[18] when documenting 100% of nurses had recorded the client's name, drug name, number of doses, method, and time of administration of the drug and wrote down the nurse's name and initials during documentation, but most nurses 71.7% still document drug administration during spare time only. However, these results do not align with the research by Wardana *et al.*, 2013 on applying the right documentation principles. As much as 65.5% of respondents did not use the right documentation principles, and the respondents who gave the medicine did not write their names and sign after giving the medication. In terms of therapy, after the drug is given, the nurse must document the dose, route, time, and by whom the drug was given. If the patient refuses to take the medicine or cannot be taken, the reason must be recorded and reported (Lestari, 2016)^[8].

The right documentation is very important in administering medications as an effective communication medium between professionals in the patient's health care team and is written information related to patient data. Nursing documentation aims to plan patient care as an indicator of the quality of health services, as a data source for research to develop nursing knowledge, and as evidence of responsibility and accountability for implementing nursing care (Lestari, 2016; Potter *et al.*, 2021)^[8, 13].

3.2.7 The Right Information Principles

The principle of the right information is nurses' action in educating patients and families through information related to drugs that will be given to patients (Lestari, 2016)^[8].

The results showed that the application of the principle of the right information in administering drugs by nurses at the Aceh Psychiatric Hospital Indonesia was in the right category of as many as 127 respondents (97.7%) and the less true category of as many as three respondents (2.3%).

This research aligns with that conducted by Mahfudhah and Mayasari (2018)^[9]. Medication administration based on correct information was in the right category at 92.5%; some nurses had provided information about the drug to be given both to the family and the patient himself. This is also by Agustina's research (2014)^[11], where there was an increase in patient knowledge after being given an intervention in the form of providing drug information that was able to help patients increase their understanding of the drugs to be consumed.

The results of this study still found that three respondents (2.3%) were in the less true category, where the nurse did not explain information related to the drug that the patient would take with the assumption that patients with unstable conditions or mental disorders did not need or did not understand information about drugs and the possibility also the patient's condition is too severe causing the nurse to be unable to explain the drug to be given.

Providing information about drugs to patients is very important. Patients must get correct information about the drug to be given so that errors do not occur in drug administration. Nurses have a responsibility to conduct health education to patients, families, and the wider community, especially those related to drugs, such as the general benefits of drugs, the use of correct drugs, reasons for drug therapy, and overall health, expected results after medication administration, side effects and adverse reactions from drugs, drug interactions with medicines and drugs with food, changes needed in carrying out daily activities during illness (Lestari, 2016)^[8].

4. Conclusions

The application of the seven right principles of drug administration by nurses to patients at the Aceh Mental Hospital Indonesia includes the right patient 96.9%, the right drug 77.7%, the right dose 75.4%, the right route 97.7%, the right time 96.6%, the right documentation 98.5%, and 97.7% the right information. The principle of the seven right of drug administration is a nurse's action in using the nursing process approach with attention to patient safety which must be continuously maintained and improved with periodic supervision and additional knowledge for nurses.

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