

Supplement

Seven Rights of Medication Administration: Nurses' Knowledge, Attitude, and Compliance

Prosedur Tujuh Benar Pemberian Obat: Pengetahuan, Sikap, dan Penerapan Perawat

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ABSTRACT

Medication error becomes one of the main concerns in ensuring patient safety. In 2020, X Hospital reported medication error incidents. Although categorized near miss, the incidents should have been prevented. One of the methods to prevent medication errors is by applying the seven rights of medication administration. This study aimed to identify the inhibiting factors in the implementation of the seven rights of medication administration in X Hospital and obtain alternative solutions to those obstacles. This study used an analytic observational design with a cross-sectional design. Data were collected from observations and a survey. Observations and a survey through questionnaires to 20 nurses at X Hospital were made to see the implementation of the procedure. At the end of the data collection, interviews were conducted to find out the obstacles in the inpatient installation in applying the seven rights of medication administration. The results show that the main root causes of medication administration errors were the standard operating procedure (SOP) that has not been standardized and nurses' non-compliance behavior on the seven rights procedure. To resolve medication administration errors, the hospital manager should revise the SOP, conduct internal workshops, and perform scheduled supervision to the nurses.

Keywords: Medication administration, nurses' compliance, patient safety

ABSTRAK

Medication error menjadi salah satu perhatian utama pada upaya memastikan keselamatan pasien. Pada tahun 2020, Rumah Sakit X melaporkan adanya kejadian kesalahan pemberian obat. Meskipun kejadian tersebut merupakan kejadian near miss, namun kejadian tersebut seharusnya dapat dicegah. Salah satu cara untuk mencegah kesalahan pemberian obat adalah melalui penerapan prinsip tujuh benar pemberian obat. Tujuan penelitian ini untuk mengidentifikasi faktor penghambat penerapan prosedur tujuh benar pemberian obat di Rumah Sakit X sekaligus pencarian alternatif solusi atas hambatan yang ditemukan. Penelitian ini menggunakan desain observasional analitik dengan desain *cross-sectional*. Pengumpulan data dilakukan dengan teknik observasi dan survey. Survey melalui kuesioner dari 20 perawat di Rumah Sakit X dan observasi dilakukan untuk melihat pelaksanaan prosedur tersebut. Pada akhir proses pengambilan data, wawancara dilakukan untuk mengetahui kendala di instalasi rawat inap sebagai pelaksana prosedur tujuh benar pemberian obat tersebut. Hasil penelitian menunjukkan akar masalah utama kesalahan pemberian obat, adalah standar prosedur operasional (SPO) yang belum terstandar dan ketidakpatuhan perawat dalam prosedur tujuh benar pemberian obat. Sebagai solusi, manajemen rumah sakit dapat memperbaiki SPO, melakukan workshop internal, dan supervisi secara terjadwal untuk menyelesaikan masalah kesalahan pemberian obat tersebut.

Kata Kunci: Kepatuhan perawat, keselamatan pasien, pemberian obat

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INTRODUCTION

Medication errors often occur among inpatients, resulting in losses and endangering patient safety (1). A number of patients (3.7%) reported having a disability due to negligence (2). Ehsani *et al.*, explained that medication errors could prolong hospitalization length by two days and increase the cost of around 2000-2500 dollars for each patient (3). In the United States, medication errors have caused one death each day and injured 1.3 million people each year (4). Meanwhile, in Australia, 9% of medication errors occur in the medication administration phase (5).

The most common medication errors are at the medication administration phase carried out by nurses. Based on research from the British National Patient Safety Agency, of the various types of medication errors, 50% are due to medication administration errors, 18% due to the dispensing phase, and 16% due to the prescribing phase. The first case study in Indonesia at 15 hospitals using 4500 medical records shows that the adverse event varies widely, ranging from 8.0% to 98.2% for misdiagnosis and 4.1% to 91.6% for medication errors (6). Approximately 3-6.9% of medication errors in Indonesia occur in patients undergoing hospitalization, 0.03-16.9% are due to medication request errors, and 11% are related to errors when delivering drugs to patients (7).

A preliminary study at the hospital where this study was conducted by tracing documents in January-June 2020 identified two incidents of medication errors to patients in the inpatient departments. To overcome medication errors in patient care, quality indicators that assess drug preparation and administration are established (8). Many policies and guidelines have been designed to help prevent medication errors by applying the seven rights principle (8). Kim *et al.*, in their research in Las Vegas, found a relationship between the seven rights principle and the incidence of medication errors in hospitals in several care units (9). To ensure a safe preparation and medication administration, nurses are trained to apply the seven rights principle. In administering drugs to patients, nurses must ensure that the drugs given correspond to the patient's identity, dose, route, and drug type (10). Various studies explain that the biggest cause of medication errors is from the nurses (11). Aspects that affect medication errors and the seven rights principle are knowledge, attitudes, and behavior (12). Knowledge and the attitude of health practitioners in applying the seven rights principle are important factors determining its application's success. Therefore, this study was conducted on nurses' knowledge and attitudes in applying the seven rights principle.

METHOD

This study was conducted using two methods, observations and a survey. The observations aimed to identify the compliance level of the health personnel in carrying out the seven rights principle of medication administration by using a checklist containing 13 observation items. The researcher carried out a three-day observation in three work shifts (morning, afternoon, and evening) as an observer. The survey was conducted by distributing questionnaires containing 30 questions with 5 Likert scales to all nurses (12) in the inpatient department and aimed to measure the knowledge and attitudes of nurses in carrying out the seven rights of medication administration. The knowledge category was divided into

three, good category if >75%, sufficient category if <56-74%, and poor category if <55% (13). The survey and observation data were presented in tabular form and described so that the results were easier to analyze.

RESULTS

The characteristics of nurses in this hospital's inpatient installation are all female (100%), mostly (65%) are aged 21-25, and the highest education level is Diploma III (75%).

Nurse's Knowledge and Attitude

The questionnaire results on knowledge show that 75% of inpatient nurses have good knowledge and five (25%) have poor knowledge. The nurses show a good attitude in implementing medication administration based on the seven rights principle. The highest indicator on the application of the seven rights of medication administration is that it is important for patient safety (4.95), and the lowest mean value is in reminding the doctor in charge of the patients (DPJP) (4.15). It is interesting to study that the correct application of the seven rights is considered to increase the workload (4.15).

Table 1. Respondents' knowledge and attitude on the application of the seven rights of medication administration

No	Assessment Aspect	Frequency (n)	Percentage (%)
Knowledge			
1	Good	15	75%
2	Poor	5	25%
	Total	20	100%
Attitude			
		Mean	Category
1	I feel that the seven rights procedure is important for patient safety	4,95	Good
2	I feel that the administration of drugs must follow the SOP	4,85	Good
3	I feel that it is necessary to advise the doctor for the correct application of indications	4,15	Good
4	I feel that implementing seven rights adds to the workload	4,15	Poor
5	I feel that the application of seven rights makes me discipline in medication administration	4,75	Good
6	I feel that the seven rights standard makes me more consistent and disciplined	4,75	Good
7	I feel that I have to make sure the medicine is taken	4,65	Good
8	I feel that medication errors can occur if the seven-rights principle are not implemented properly	4,65	Good
9	I feel that I am forced to do the seven rights principle in administering medicine	4,3	Good
10	I feel that applying the seven rights principle makes it easier to give the medicine better	4,8	Good
11	I feel that applying the seven rights principle makes medication administration safer	4,9	Good

Nurse's Compliance

The observation results on the application of seven rights of medication administration show very good results, but four principles have not been maximally applied. However, the three procedures that have not been adhered to

properly are the correct method of administration with the indicator of checking the expiration date (62%), correct information with the indicator of writing information on the medical record form (64%), and correct documentation (53%). In fact, only 32% of the respondents adhered to the correct patient procedure with an identity bracelet checking indicator.

Table 4. Overview of respondent compliance

Procedure for administering medication to patients	Results
Right patient:	
a. Ask the patient to state his/her name and date of birth.	100%
b. Check the patient's identity bracelet using at least two identifications (name, date of birth, and/or medical record number).	32%
Right dose:	
Reconfirm the dosage with the recommended prescription.	100%
Right drug type:	
a. Check the drug labels	100%
b. Check the prescribed drug orders	100%
Right time:	
a. Check that the dose is given in the correct time	100%
b. Confirm the last dose given	100%
Right route:	
a. Recheck the suitability of the drug type and the route of administration of the drug before it is given to the patient	100%
b. Check the expiration date	62%
Right information:	
a. Explain the purpose and how to take the correct medicine	85%
b. Explain the treatment plan	85%
c. Write down the information provided in the integrated educational record form in the medical record	64%
Right documentation:	
Nurses make documentation after drug administration such as patient name, drug name and allergy, drug dose, drug route, and time of drug administration.	53%

DISCUSSION

This study found that the nurse's knowledge and attitudes on the seven rights of medication administration have shown good results, although some are still not optimal. The nurses' attitudes that have the lowest mean value are found in reminding the doctor in charge of patients and in the point that implementing seven rights adds the workload. Medication administration is in a good category based on the results of the right patient observation, right drug, right dose, right time, right route, right information, and right documentation. However, medication administrations based on right patient, right route, right information, and right documentation have not reached 100%. If nurses do not have the knowledge, attitudes, and adherence to the seven rights of medication administration, it will increase patient safety incidence.

The study on literature highlights that medication errors occur if a nurse has poor or incorrect knowledge (14). There are different results regarding the effect of knowledge on the occurrence of medication errors. Latif et al. stated that almost half of the medication errors occurred in the intensive care unit due to problems of

knowledge and medical services (15). Nevertheless, Rothschild et al. found that only 25% of errors were caused by inadequate knowledge (16). Errors originating from the medication administration process can be considered a violation only if the operator makes a mistake by taking shortcuts, bypassing the security controls of technological devices, or skipping the protocol steps (17). In another study, nurses with a high level of education have a better level of knowledge about medication administration procedures. However, unfortunately, the level of knowledge is not directly related to behavior in administering drugs according to procedures (10).

Nurses' attitude is also important in preventing medication errors. Previous research explained that nurses' attitudes have a significant effect on the process of giving treatment (10). From the literature study, 90% of nurses realized that the lack of appropriate information on the prevalence, causes, and consequences of medication errors hinders the development of strategies to reduce errors in the medication administration process (18). Hospitals must always provide training to increase patient awareness regarding administering medication with the seven rights procedure to reduce medication errors (19).

The results of the observations of adherence to the application of seven rights of medication administration are in a good category but have not reached 100%. A study by Fatimah also found the inaccuracy of seven-rights procedures in the range of only 3.1% to 100%, while Pranasari's research found compliance at least 73.2% (20,21). Compliance is part of individual behavior to obey or comply with recommendations, procedures, or rules (21,22), which is influenced not only by individual factors but also from supporting work environment factors, such as the supervision of the head of the room, which is one of the activities in the directive function in the management function.

Health personnel compliance can be improved by supervision carried out by the head of the room as a form of continuous supervision and guidance that includes nursing service problems, personnel problems, and equipment problems so that patients receive high-quality services (23). Proctor's supervision model may be applied to improve adherence to medication administration procedures with the seven rights (24). Proctor's supervision model provides guidance and follow-up for individual development, professional support, and increasing nurses' self-awareness to improve patient safety (25). The normative function of the Proctor refers to monitoring and evaluation to improve the service quality, the formative function focuses on developing staff knowledge and skills to increase self-awareness to study and work according to applicable standards, and the restorative function means to provide mutual support so that supervision carried out runs optimally (26).

In addition to supervision, establishing a clear SOP to build compliance is necessary because this hospital has not yet developed a seven rights SOP. The SOP preparation is useful for documenting the activity steps and ensuring hospital staff understands the processes in carrying out their work (27). The completeness of the SOP and the flow of services are very influential in supporting the operational activities of the organization or company and building work commitment in creating services that prioritize quality and patient safety (28). Guidelines or

SOPs for correct medication administration followed by dissemination are tools to evaluate and prevent medication errors to patients so that medication administration is safe and patient safety is maintained (29-31).

This study identifies a weak adherence to the implementation of seven rights of medication administration, especially in checking the patient's identity. Even though nurses already have good knowledge, they perceive that the seven rights of

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