



The Implementation of Collaborative Drug Administration Intervention in the Emergency Room of Hospital X at Banda Aceh

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Article Information ABSTRACT

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Medication safety is a main focus to maintain patient safety. Recent studies show that almost 50% of adverse incidents in the global health system are rooted in inaccuracy in drug administration. This study aimed to determine the implementation of collaborative interventions for drug administration in the Emergency Room of X Hospital in Banda Aceh. This quantitative descriptive study, using a cross-sectional approach, used a total sampling technique to select 58 respondents. Data was collected through direct observation of drug administration practices and analyzed using descriptive statistical tests. The results showed that the implementation of the principle of the seven rights of drug administration in the Emergency Room of Hospital X in Banda Aceh was in the good category (72.4%); with the implementation of drug administration to the right patient (91.4%), right drug (96.6%), right dose (100%), right route (100%), right time (94.8%), right documentation (93.1%), and right information (96.6%). In conclusion, nurses in the Emergency Room of Hospital X have applied the seven rights of drug administration principle. However, more effort is required to increase nurse adherence to this principle, especially in verifying patient identity and providing drug information. It is expected that hospitals can conduct continuous planning, monitoring, evaluation, and supervision to strengthen the implementation of the seven rights principles of drug administration and to ensure patient safety.

Introduction

Nurses are a profession that plays a vital role in providing direct care to patients. In the context of therapy management, the collaborative role and the provision of nursing care are of paramount importance. Nurses are responsible for ensuring that patients' therapeutic needs are optimally met through the implementation of the nursing process, which includes a comprehensive assessment, nursing diagnosis, care planning, intervention implementation, and outcome evaluation (Lestari, 2016).

This aligns with the Indonesian Minister of Health Regulation No. 26 of 2019, article 17 (J), which authorizes nurses to manage the administration of medication to clients according to medical prescriptions or over-the-counter and limited over-the-counter drugs. In providing healthcare services, nurses collaborate with other healthcare team members to resolve patients' health problems. One form of collaborative healthcare service is drug administration (Putriana et al., 2015).

The primary role of nurses in drug administration is to enhance and maintain patient health. Nurses assist patients in developing an accurate and clear understanding of their medication, provide consultations on each prescribed drug, and are responsible for making treatment decisions in collaboration with other healthcare professionals (Mubarak et al., 2015).

If medication is not administered according to proper procedures, it can lead to toxic effects on the human body. Conversely, correct drug administration can be an effective therapeutic intervention. In this context, nurses serve as the frontline in ensuring the safety and effectiveness of drug administration to patients. Each drug administration must be based on a comprehensive nursing care plan, so that it can be tailored to the individual patient's condition and needs (Hardianti & Mappangaro, 2016).

Research findings from several hospitals in Banda Aceh indicate that, in general, nurses have applied the seven-rights principle of drug administration well. A majority of the studies reported high adherence rates to the right drug, dose, route, and documentation principles. However, some studies also identified variations in the application of the right patient and right time principles. Factors such as a lack of standardized operational procedures (SOPs) and nurses' non-compliance with established procedures were identified as the primary root causes of inaccurate drug administration. These findings suggest that despite improvements in the application of the seven-rights principles, continuous efforts are still needed to ensure consistency and accuracy, especially in patient identity verification and the timeliness of administration. (Aprilia, 2022; Mahfudhah & Mayasari, 2018; Pranasari, 2016; Primanoviasari, 2018; Purnami, 2018; Puspitasari, et al. 2021; Uzira, et al. 2023)

A study conducted in the Emergency Room by Tomi et al. (2017) showed the following distribution of drug administration errors: 28 patients experienced one error, 48 patients experienced two errors, 20 patients experienced three errors, and 8 patients experienced four errors. Overall, there were 216 drug administration errors among 106 patients, with an average of 2 errors per patient. Errors in the prescribing stage accounted for 98.11%, while errors in the administration stage accounted for 61.32%.

According to data obtained during initial data collection at Hospital X in Banda Aceh, there were 28 incidents of drug administration errors in 2023, with the following details: 1 Potential Injury Event, 13 Near Miss Events, 8 No-Injury Events, 6 Adverse Drug Events, and no Sentinel events. Meanwhile, reports of drug administration errors in 2024 showed 18 incidents, with the following details: 1 Potential Injury Event, 4 Near Miss Events, 5 No-Injury Events, and 8 Adverse Drug Events. This data is more frequently reported from inpatient wards. Reports of drug administration errors in the Emergency Room are fewer, but the potential for drug administration errors is also significant. Therefore, the researcher was interested in conducting observations on collaborative drug administration interventions in the Emergency Room of Hospital X in Banda Aceh.

Method

This study employed a descriptive quantitative design with a cross-sectional approach and was conducted in the Emergency Department of Hospital X in Banda Aceh from November 28 to December 16, 2024. The population consisted of 58 nurses working in the emergency unit, all of whom were included as the sample using a total sampling technique because the population size was fewer than 100. Data were collected through direct observation of nurses' drug administration practices using an observational checklist containing structured yes/no items representing the essential steps of drug administration. The checklist underwent content validity assessment by experts in emergency nursing from the Faculty of Nursing, Universitas Syiah Kuala, using the Content Validity Index (CVI), in which each item was rated on a four-point relevance scale (1 = not relevant to 4 = highly relevant). All data were analyzed using descriptive statistical methods to describe the level of adherence to drug principles among emergency department nurses.

Result and Discussion

Data collection was conducted from November 28 to December 16, 2024, involving 58 nurses in the Emergency Room of Hospital X. Observations were carried out using a 30-item checklist to assess the implementation of the seven rights of drug administration.

Table 1. Frequency Distribution of Respondent Demographics in the Emergency Room of Hospital X in Banda Aceh 2024

Demographics	F	%
Age		
Early Adulthood (26–35 years)	38	65.5
Late Adulthood (36–45 years)	20	34.5
Gender		
Male	37	63.8
Female	21	36.2
Education Level		
Diploma in Nursing	33	56.9
Bachelor's Degree (Ners)	25	43.1
Employment Status		
Civil Servant	53	91.4
Contract Worker	5	8.6
Years of Service		
< 6 years	17	29.3
6–10 years	34	58.6
> 10 years	7	12.1
Patient Safety Training		
Has Attended	58	100.0
Total	58	100

Table 1 shows that most respondents were aged 26–35 years (38; 65.5%), male (37; 63.8%), held a Diploma in Nursing (33; 56.9%), and were predominantly civil servants (53; 91.4%). More than half had 6–10 years of work experience (34; 58.6%), and all nurses (100%) had received patient safety training. This demographic profile indicates a relatively experienced nursing workforce with adequate exposure to safety protocols, which is expected to influence adherence to medication safety standards.

Table 2. Frequency Distribution of The Implementation of The Seven Rights Principles in Drug Administration by Nurses in The Emergency Room of Hospital X

Category	F	%
Good	42	72.4
Needs Improvement	16	27.6
Total	58	100

Table 2 demonstrates that the overall implementation of the seven rights principles was categorized as good in 42 nurses (72.4%), with 16 (27.6%) needing improvement. The generally good performance may be supported by mandatory patient safety training, which has been reported to improve nurses' compliance with safe medication procedures (Dewi & Lestari, 2020). Work experience also contributes to clinical accuracy, as nurses with more than five years of service tend to show higher adherence to medication safety principles (Sari & Nugroho, 2019)

Table 3. Frequency Distribution of The Implementation of The Right Patient Principles in Drug Administration by Nurses in The Emergency Room of Hospital X (n=58)

Category	F	%
Good	53	91.4
Needs Improvement	5	8.6
Total	58	100

Table 3 shows high adherence to the Right Patient principle (53; 91.4%). The 5 nurses (8.6%) who did not consistently verify patient identity skipped re-confirmation during repeat medication rounds. Proper patient identification is essential to prevent medication errors, and similar high

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compliance levels were reported by Basri & Purnamasari (2021) and Mahfudhah & Mayasari (2018).

Table 4. Frequency Distribution of The Implementation of The Right Drug Principles in Drug Administration by Nurses in The Emergency Room of Hospital X (n=58)

Category	F	%
Good	56	96.6
Needs Improvement	2	3.4
Total	58	100

Table 4 shows that 56 nurses (96.6%) performed correct drug verification, while 2 (3.4%) did not perform double-checking due to emergency situations. According to Lestari (2016), label verification and cross-checking with medical records are essential to reduce medication errors, but urgent conditions may limit full compliance.

Table 5. Frequency Distribution of The Implementation of The Right Dose Principles in Drug Administration by Nurses in The Emergency Room of Hospital X

Category	F	%
Good	58	100.0
Total	58	100

Table 5 indicates that all respondents, 58 nurses (100%), correctly applied the Right Dose principle. Consistent dosing accuracy aligns with literature emphasizing nurses' responsibility to ensure prescribed doses are followed (Lestari, 2016; Mahfudhah & Mayasari, 2018). High accuracy in dosing reflects effective interprofessional

communication and vigilance key elements of safe medication practice.

Table 6. Frequency Distribution of The Implementation of The Right Route Principles in Drug Administration by Nurses in The Emergency Room of Hospital X (n=58)

Category	F	%
Good	58	100.0
Total	58	100

Table 6 shows that the Right Route principle was also fully implemented in 58 nurses (100%). Verification of the administration route particularly checking prescription orders and drug packaging is a crucial safety step (Setianingsih & Septiyana, 2020), and these findings indicate that such practices have been integrated into routine nursing procedures.

Table 7. Frequency Distribution of The Implementation of The Right Time Principles in Drug Administration by Nurses in The Emergency Room of Hospital X (n=58)

Category	F	%
Good	55	94.8
Needs Improvement	3	5.2
Total	58	100

Table 7 shows that the majority of nurses (55; 94.8%) followed the prescribed drug administration schedule, while a small proportion (3; 5.2%) showed suboptimal compliance. Ensuring timely drug administration requires consideration of pharmacokinetic factors, especially the drug's half-life (Kamienski & Keogh, 2015). Although the proportion of non-compliant nurses is minimal, this finding highlights the need for supportive

strategies, such as alarm systems or documentation-based reminders to improve adherence to medication timing.

Table 8. Frequency Distribution of The Implementation of The Right Documentation Principles in Drug Administration by Nurses in The Emergency Room of Hospital X (n=58)

Category	F	%
Good	54	93.1
Needs Improvement	4	6.9
Total	58	100

Table 8 shows that 54 respondents (93.1%) recorded drug administration appropriately. Proper documentation supports continuity of care and reduces medical errors (Lestari, 2016; Aprilia et al., 2022). The 4 nurses (6.9%) who did not document accurately likely experienced lapses during periods of high workload, highlighting the importance of consistent documentation audits.

Table 9. Frequency Distribution of The Implementation of The Right Information Principles in Drug Administration by Nurses in The Emergency Room of Hospital X (n=58)

Category	F	%
Good	56	96.6
Needs Improvement	2	3.4
Total	58	100

Table 9 shows that the correct implementation of information was well carried out by 56 nurses (96.6%). Two respondents (3.4%) did not provide explanations about medication, often influenced by patient instability or the assumption that the information was

unnecessary. Providing clear medication information is essential to prevent misunderstandings and support patient participation (Lestari, 2016; Mahfudhah & Mayasari, 2018), and should be maintained even in emergency contexts whenever possible.

Conclusion

Based on research conducted on 58 nurses working in the Emergency Room of Hospital X in Banda Aceh, it can be concluded that the implementation of the seven rights of drug administration has generally been carried out well. The majority of nurses have applied these principles correctly, especially regarding the right dose and the right route of administration, which reached 100%. However, certain aspects such as accurate documentation and correct patient still require further attention. Therefore, healthcare professionals need to continuously improve their understanding and competence regarding the seven rights of drug administration to ensure optimal service. Hospitals are also expected to integrate these principles into their planning programs, carry out ongoing monitoring, evaluation, and supervision. Additionally, an evaluation of established procedures should be conducted as a benchmark for achieving Standard Operating Procedures (SOPs). For future research, it is recommended to explore more deeply the factors that influence the implementation of the seven rights principles of drug administration in hospitals, as well as to conduct research

with a broader scope to obtain a more comprehensive overview.

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