

# Factors Influencing Nurse Compliance in Applying the Six Principles of Drug Administration at RSUD Wates

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**Abstract**— Giving the wrong medication to the patient can cause problems such as the trauma of taking the drug, the patient's disability, and even death. The provision of nursing services by standard operating procedures (SOP) greatly helps nurses to achieve quality nursing care. Nurses are required to be able to administer drugs accordingly and must pay attention to the principle of six true namely true medicine, correct dosage, correct method (route), correct time, correct patient, and correct documentation. The purpose of this study was to determine what factors influence adherence in drug administration in terms of characteristics (age, sex), fatigue, education level, personality, workload, and leadership style of the head of the care room. This research is a quantitative study with a descriptive correlation design with a cross-sectional approach. Factors that influence nurses' compliance in applying the six principles of correct drug delivery are workload (0.000), leadership style (0.006), and personality (0.000). While unrelated factors are fatigue (0.091), education (0.166), age (0.906), and gender (0.072).

**Keywords**— *Nurse Compliance, Six Correct Drug Administration, Patient Safety*

## I. INTRODUCTION

Patient safety is a variable to measure and evaluate the level of quality of nursing services that have an impact on health services. The patient safety program is an effort to reduce the number of unexpected events (KTD) in hospitals. Hospital patient safety programs have goals such as prevention of pressure sores, prevention of errors in drug administration, prevention of falls, prevention of injury due to restraining, prevention of phlebitis or complications after intravenous measures, and prevention of nosocomial infections [1].

Errors in drug administration can cause problems for patients such as the trauma of taking drugs, disability of patients, and even death. One of the causes of nurse medication errors is confusing drug names. This is due to a lack of knowledge about drug names that are difficult to understand, the existence of new products, packaging, and labeling of the same drug, the same form, and dosage of drugs, the same rules of use, and mis understanding when giving orders before the drug is given to patients [2].

In providing nursing services, standard operating procedures (SOP) greatly help nurses to achieve quality nursing care. A nurse must think realistic all about all aspects of quality nursing care, including standards for drug administration. Providing appropriate and safe medicine is one of the nurse's responsibility. A nurse must understand how the drug works and drug side effects, give the drug appropriately, monitor the patient's response after being given the drug, and help patients use it correctly and based on knowledge [3]. Nurses are required to be able to administer drugs accordingly and must pay attention to the principle of six true namely true medicine, correct dosage, correct method (route), correct time, correct patient, and correct documentation [4].

Safety incidents in drug aid are very serious patient safety issues in international health care regulations. The incidence of aid is a significant problem in the United States, an average of 450,000 errors in the supply of supporting drugs each year [5]. Errors that occur in treatment there are 7000 deaths each year in the United States, nearly 40% of errors occur when giving drugs. Drug delivery to patients in Indonesia is based on Standard Operating Procedures (SOP) which consist of the six principles of correct drug administration. Data on errors in drug administration from one of the public hospitals in Yogyakarta, there were 33 cases of drug administration errors in 2014 [4].

The results of a field study conducted at Wates Regional Hospital on January 24, 2019, regarding nurses' discrepancies that occur in the application of the correct principle of drug administration, namely the inaccurate time in drug administration. It also said eight out of 10 nurses felt their work load was high. High workloads can cause fatigue and decreased performance. So that the impact on errors in work, including one of the mistakes in drug administration. The results of research by Fatma et al [6] revealed a description of the implementation of patient identification before taking nursing actions at RSUD Wates. Misidentification of patients often occurs at the stage of diagnosis and treatment so that the accuracy of patient identification is required. It was stated that there were still 35.9% of nurses not identified when they were going to administer the drug. We know that identification of patients before drug administration is necessary to avoid the patient's

mistakes because in the administration of drugs there should be no mistakes. The purpose of this study was to determine what factors influence adherence in drug administration in terms of characteristics (age,sex), fatigue, level of education, personality, workload, and leadership style of the head of the carerom.

**II. METHOD**

This research is a quantitative study with a descriptive correlation design in which the researcher associates the independent variable with the dependent variable whether there is a relationship between each variable. The design of this study uses a cross-sectional approach, meaning that the retrieval of data concerning independent variables and the dependent variable is collected at one time [7]. This research was conducted in Room X, Y and Z at RSUD Wates, Kulon Progo Regency, Yogyakarta. This research was conducted from May to November2019.

**III. RESULT AND DISCUSSION**

*A. Result*

**TABLE I. CHARACTERISTICS OF RESPONDENTS**

Characteristics		Frequency	%	
1	Gender	Male	9	22
		Female	32	78
Total		41	100	
2	Age	Early adulthood	28	68,3
		Late adulthood	13	31,7
Total		41	100	
3	Education	D3	35	85,4
		D4/S1	6	14,5
Total		41	100	

Source: Primary data 2019

Table 1 shows the characteristics of respondents with a total of 41 people. The average gender of female respondents is 78%. Most age 68.3% in the early adult category. The averagelevel of education of D3 graduates was85.4%.

Table 2 shows the percentage of at most 51,2% nurses with moderate levels of fatigue have compliance giving drugs with the principle of 6 correct enough categories. Statistical test results showed that there was no relationship between nurses' fatigue and compliance in applying the correct 6 drug administration.

**TABLE II. STATISTICAL TEST RESULTS OF WEAKNESS LEVELS WITH NURSING COMPLIANCE**

Fatigue	Obedience				Total		p-value
	Enough		Well		P	%	
	P	%	P	%			
Moderate	21	51,2	3	7,3	24	58,5	0,09
Severe	11	26,8	6	14,6	17	41,5	

Total	32	78	9	22	41	100
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Source: Primary data 2019

**TABLE III. STATISTICAL TEST RESULTS OF WORKLOADS WITH NURSING COMPLIANCE**

Workloads	Obedience				Total		p-value	R
	Enough		Well		P	%		
	P	%	P	%				
Mild	1	2,4	7	17,1	8	19,5	0,000	-0,98
Moderate	3	75,6	2	4,9	3	80,5		
Total	3	78	9	22	4	100		

Source: Primary data 2019

Table 3 is a cross-tabulation of nurses' workload with adherence to the six correct administration of drugs with the result that most of the 75.6% nurses have moderate workloads and adequate compliance. Statistical test results showed that there was a relationship between nurses' workload and compliance in applying the 6 correct drug administration, namely 0,000 and the closeness of a negative relationship of 0.98.

**TABLE IV. RESULTS OF LEADERSHIP STATISTICS TEST WITH NURSE COMPLIANCE**

Leadership Style	Obedience				Total		p-value	r
	Enough		Well		P	%		
	P	%	P	%				
Consultative	20	48,8	1	2,4	21	51,5	0,006	0,39
Participatory	12	29,3	8	19,5	20	48,8		
Total	32	78	9	22	41	100		

Source: Primary data 2019

Table 4 shows the results of the tabulation of the leadership style of the head nurse room with adherence to applying six correct drug administration, the results of which mostly 48.8% of nurses perceive the headroom with a consultative style and adequate adherence. Statistical test results showed that there was a relationship between the leadership style of the head nurse room with adherence in implementing the 6 correct drug administration methods 0,006.

Table 5 shows thecross-tabulation of nurses' personality types with adherence to applying six correct drug administration results with the majority of 61% of nurses having introverted personality types and sufficient adherence. Statistical test results show there is a relationship between the personality type of nurses with adherence in applying the 6 correct drug administration that is 0,000.

TABLE V. RESULTS OF PERSONAL STATISTICS TEST WITH NURSING COMPLIANCE

Personality	Obedience				Total		p-value	r
	Enough		Well		P	%		
	P	%	P	%				
Introvert	25	61	1	2,4	26	63,4	0,000	0,49
Ekstrovert	7	17,1	8	19,5	15	36,6		
Total	32	78	9	22	41	100		

Source: Primary data 2019

TABLE VI. STATISTICAL TEST RESULTS OF EDUCATIONAL CHARACTERISTICS WITH NURSE COMPLIANCE

Education	Obedience				Total		p-value
	Enough		Well		P	%	
	P	%	P	%			
D3	29	70,7	6	14,7	35	85,4	0,16
D4/S1	3	7,3	3	7,3	6	14,6	
Total	32	78	9	22	41	100	

Source: Primary data 2019

Table 6 shows the cross-tabulation of the level of education of nurses with adherence to applying the six correct drug administration results which mostly 70.7% of nurses have education level S1 / D4 s and sufficient adherence. Statistical test results show there is no relationship between the level of education of nurses with adherence in applying the correct 6 drug administration that is 0,16.

TABLE VII. STATISTICAL TEST RESULTS OF CHARACTERISTIC AGES WITH NURSING COMPLIANCE

Age	Obedience				Total		p-value
	Enough		Well		P	%	
	P	%	P	%			
Early adulthood	22	53,7	6	14,6	28	68,3	0,90
Late adulthood	10	24,4	3	7,3	13	31,7	
Total	32	78,9	9	22	41	100	

Source: Primary data 2019

Table 7 is a cross-tabulation of the age variable of nurses with adherence to applying the six correct drug administration results with the majority of 53,7% nurses having early adulthood and adequate adherence. Statistical test results show there is no relationship between the age of nurses with adherence in applying the 6 correct drug administration that is 0,90.

TABLE VIII. RESULTS OF STATISTIC TESTS OF CHARACTERISTIC TYPE OF SEX WITH NURSE COMPLIANCE

Gender	Obedience				Total		p-value
	Enough		Well		P	%	
	P	%	P	%			
Male	9	22	0	0	9	22	0,072
Female	23	56,1	9	22	32	78	
Total	32	78	9	22	41	100	

Female	23	56,1	9	22	32	78	0,072
Total	32	78	9	22	41	100	

Source: Primary data 2019

Table 8 is a cross-tabulation of the sex of nurses with adherence to the six correct administration of drugs with the majority of 56,1% nurses being female and adhering to adequate compliance. Statistical test results showed there was no relationship between nurses' sex with adherence in implementing 6 correct drug administration that is 0,072.

**B. Discussion**

*1) Characteristics of Respondents*

Respondents in this study were 41 clinical nurses. By the law that nursing staff is one of the hospital's permanent staff [8]. Most of the nurses involved in the research with female sex were 78%. It is known that the performance of female nurses is mostly in the good category [9]. The number of nurses in Indonesia from the Indonesian Ministry of Health's Data and Information Center in 2017 was 359,339 nurses consisting of 103,013 (29%) men and 256,326 (71%) women. In contrast to the number of Indonesian nurses working abroad, 62% were men and 38% were women from a total of 652 nurses. The highest percentage according to the type of health facility, most nurses working in hospitals was 58,26%[10].

The average age of nurses in the early adult category was 68,3%. Individuals in early adulthood who work will affect their quality of life, be able to get work done, succeed at work, adequate earnings have an impact on self-esteem that can lead to self- confidence, confidence in self-ability, sure to try new things and allow more petrified for each other [11]. Nurse education in this study was mostly D3 85.4%. D3 Nursing education is vocational and includes a minimum requirement for the nurse profession [12]. One of the efforts to develop nursing education is by converting SPK Education to D3 nursing academy level and is expected to continue to the S1 nursing level. Vocational nurses are expected to have the behavior, ability, and competence in conducting basic nursing care independently under supervision [13].

*2) Fatigue Level with Nurse Compliance*

The results of statistical tests of fatigue levels with nurses' compliance carrying out six correct drug administration obtained p-value 0,09 which means there is no relationship. Fros tabulation data obtained mostly 51.2% of respondents who experienced moderate fatigue with sufficient levels of adherence. Fatigue experienced by nurses is the responsibility of individuals and organizations where nurses work. Organizations that allow nurses to continue working when they are exhausted can endanger the safety of patients and other health professionals[14]. However, a nurse's responsibility towards her patient is emphasized. Although in a state of fatigue, a nurse must be able to provide the best service and adhere to the established rules, including compliance with medication correctly.

*3) The workload with Nurse Compliance*

Statistical test results show there is a relationship between nurses' workload with adherence in implementing the six correct drug administration. In contrast to the

previous discussion, if fatigue does not affect compliance, the workload does affect compliance. The results of crosstabulation showed that most nurses with moderate workloads and 75,6% compliance were sufficient. The correlation test results of this study are in line with Ahsan et al [15] with the results, there is a relationship between workload with the application of the seven true principles in drug administration. It was also conveyed to nurses in order to be able to manage their workload properly, so as not to have an impact on nursing care, especially the provision of drugs to patients. The administration of this drug is the main focus of patient safety goals. The direction of this research relationship is also the same, namely negative, meaning that the greater the workload of nurses the more disobedient in implementing the principle of six correct drug delivery.

#### 4) Leadership Style with Nurse Compliance

The leadership style perceived by nurses mostly by the head of the room used a consultative style of 51,2%. While the average value of nurses perceives a consultative leadership style with an adequate compliance category. The consultative leadership style is characterized by a leader giving sufficient direction to his subordinates. The directions are conveyed by way and in two directions. The advantage of consultative style is the involvement of subordinates in the problem-solving process so as to reduce the element of dependence on the leadership. Consultative leadership style is appropriate to be applied to the conditions of subordinates who are not yet skilled but have a strong will to carry out their duties [16]. The results of the statistical test found that there was a significant relationship between the leadership style of the headroom and the nurse's compliance in applying the principle of 6 correct drug administration. The p-value of this study obtained 0,006 which is in line with Nurhanifah's research [17] who examined the relationship between leadership style and nurse compliance with p value 0,029.

#### 5) Personality with Nurse Compliance

The results of the cross-tabulation obtained the majority of 61% of respondents with introverted personality type and sufficient adherence. Introverted personality types tend to show shyness, like to do social activities themselves, but have a fondness for writing and when doing something will think carefully [18]. Statistical test results also showed a significant relationship between personality types and nurse compliance. In line with Prasetyawati's research [19] that personality types affect one's way of thinking, work, and lifestyle. Good compliance results were dominated by respondents with extrovert personality types by 19.5%. Extroverted personality types are said to be more influential on fields that are specific such as medical which require certain skills, compared to general fields[20].

#### 6) Characteristics of Education with Nurse Compliance

The results of the cross-tabulation showed that most 70.7% of nurses with S1 / D4 education and compliance carried out 6 correctly administered drugs in a sufficient category. The statistical test of nurse education variables on nurse compliance was found to not show any relationship with p-value 0,072. These results are in line with research conducted by Harmiyadi [21] with the title factors relating to the implementation of 6 correct drug administration in Makassar Hajj hospital which shows no relationship between the level of education and the implementation of 6 correct drug administration.

That is because the level of D3 or S1 Education is included in the category of higher education which hopes with higher education awareness in carrying out actions must be by the provisions imposed in the hospital. The results of other studies related to education level with nurse compliance found no relationship occurred at hospital X in Kendari with ap-value of 1,0[22]. The level of nursing education in Indonesia with the current system has not fully answered the needs of the profession and the nation. Nursing education is developing rapidly, however, the recognition of nursing as a profession and the number of workers who dominate the health workforce has not been fully utilized[23].

#### 7) Characteristics of Age with Nurse Compliance

From the results of the statistical test of age characteristics, there is no relationship to nursing compliance. Likewise, research by Irianto et al [22] which examines the relationship of age with compliance with a p-value of 0,802 which means there is no relationship. Age categories that are respondents are divided into two namely early adulthood and late adulthood. From table 8 it can be seen that early adulthood more with good adherence than late adulthood of 14,6%.

#### 8) Gender Characteristics with Nurse Compliance

Statistical test results showed that there was no significant correlation between 0,072 between the sex of nurses and compliance with the application of the principle of 6 correct drug administration. Nurses with female gender are 22% with good compliance. Whereas nurses with male sex were not in the good category with only 22% adherence. This result is in line with Ratnawati's research[24] which there is no relationship between sex with adherence to applying hand hygiene of 0,208.

## IV. CONCLUSION

Factors that influence nurses' compliance in applying the principle of six true drug delivery are workload, leadership style, and personality. While unrelated factors are fatigue, education, age, and gender.

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