

ORIGINAL ARTICLE

Differences of Patient Safety Goal's Implementation Between Five Accredited Hospitals in Jakarta, Indonesia

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ABSTRACT

Introduction: The implementation of patient safety has been carried out in hospitals in Indonesia, but nurses are still dissatisfied with the outcome of the implementation of patient safety. This study was to identify the differences of patient safety goals' implementation between five accredited hospitals in Indonesia. **Methods:** The study used Cross Sectional design by distributing to 549 nurses from five hospitals in Jakarta, Indonesia. Nurses participated in this study through proportionate random sampling. The patient safety implementation questionnaire was developed by the research team based on six indicators by hospital accreditation committee in Indonesia. Data was analyzed descriptive, Analysis of Variant (ANOVA. **Results:** There were a difference patient safety implementation between hospitals. Overall patient safety implementation was rated as very good to excellent 88.2–91.6%. Significant differences in patient safety implementation are patient identification ($p = <0.001$), right location, patient, procedure of surgery ($p = <0.001$), reducing the risk of infection ($p = 0.001$), and reducing the risk patient fall ($p = 0.002$). Nurses' perception on accreditation system affecting patient safety implementation ($F=63.3$, $p < 0.001$). **Conclusion:** An excellent accredited hospital have a good implementation of patient safety goals even though they have not reached optimal values. Hospitals that are fully accredited must always improve patient safety continuously. The result of this study indicate that positive nurses' perception of accreditation will improve patient safety implementation in hospital.

Keywords: Accredited hospital; Differences; Implementation; Patient safety

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INTRODUCTION

National and international hospital accreditation aims to improve the quality of health services in hospitals (1). There are two accreditation standards in Indonesia, namely the national accreditation carried out by the Hospital Accreditation Committee ("Komite Akreditasi Rumah Sakit"/KARS) and international accreditation through the Joint Commission International (JCI). The systematic review study showed that hospital accreditation improves the quality of services provided by hospitals (2). Patient safety is one of the main indicators of the assessment of the quality of health services and also is one of the standards for obtaining accreditation certificates (3). Data from the World Health Organization (WHO) low-income and middle-income countries there are 134 million adverse event that cause

2.6 million deaths annually (4).

In Indonesia, the incidence of patients safety was increasing every year from 28% in 2017 to 30% in 2018 and became 31% in 2019 (5). Several ways have been implemented to improve safety through establishing standards and initiating hospital accreditation. The implementation of patient safety in Indonesia has been being implemented, however we must always make improvements. The study found the implementation of patient safety at the Regional General Hospital at Aceh was only conducted by 50.8% of nurses (6). Another study found that only 74.2% of practicing nurses at the Tangerang General Hospital was carrying out the implementation of patient safety (7). Research by Widiastari, Handiyani, & Novieastari obtained 66.4% patient satisfaction with the implementation of safety patients by health workers (8).

Other study found that the implementation of patient safety in Indonesia was still not optimal due to low nurses compliance, facilities and infrastructure do

not support, and low manager commitment (9). The research from Alahmadi (2010) stated that organisational culture is an important determinant of patient safety in health care organisations. Leadership is a critical element to the effectiveness of patient safety initiatives (10). El-jardali’s research examines that nurses’ perceptions of accreditation affect the quality of care. Nurses’ perceptions of accreditation include leadership, commitment and support, strategic quality planning, human resources utilization, use of data, quality management, staff Involvement and benefit of accreditation (11).

The Ministry of Health of Republic of Indonesia (2017) to be a guide for hospitals to carry out patient safety implementation in Indonesia. However, until now there is still small numbers of research on the implementation of patient safety in hospitals, especially hospitals that have been gaining excellent achievement accreditation. The hospitals that are gaining “Paripurna” or excellent achievement accreditation and also accredited by JCI are often being used referrals and researches on quality of health services, especially on patient safety. However, there are many factors that influence the success of patient safety implementation in hospital. Our hypothesis that there are differences in the implementation of patient safety in five hospitals that have received national and international accreditation. The research question is whether there are differences in the implementation of patient safety between national dan international accredited hospitals. This study aim to identify the differences of patient safety goals’ implementation between five accredited hospitals and also identify factors that influence patient safety implementation on accredited hospital in Jakarta.

MATERIALS AND METHODS

This study used descriptive quantitative cross-sectional approach to identify differences of patient safety goals’ implementation between five accredited hospitals in Indonesia. The research was conducted in five national and JCI accredited hospitals in the city of Jakarta Indonesia. The inclusion criteria were set to nurses who (a) worked for one year in the inpatient room of each hospital; (b) professional nurses (minimum bachelor degree). The exclusion criteria: (a) nurses who were newly; (b) nurse who is isck or on leave. The sample involved 549 nurses consisting of Hospital A (HA) 112, HB 109, HC 110, HD 104, and HE 114 respondents. Sampling was conducted by proportionate random sampling. The patient safety implementation questionnaire was developed by the research team based on six indicators of patient safety goals by hospital accreditation committee in Indonesia. The questionnaire consist of 36 items with 5 point Likert scale namely: Strongly Disagree (score 1), Disagree (score 2), Neutral (score 3), Agree (score 4), and Strongly Agree (score 5). Patient identification have

six questions, effective communication 10 questions, high alert drug have two questions, correct location of action, procedure, and patient in surgery have two questions, infection prevention and control have seven questions, and the risk of falls have nine questions. Test of validity and reliability of the questionnaire followed: first validity content by two experts, after revision validity and reliability by testes on 30 nurses at different hospitalas. Overall, the result shows that the Cronbach’s Alpha value is 0.974 and the reliability value is 0.492-0.785. Intrument of nurses’ perception of the accreditation system adopted from El-Jardali et al (2008). The questionnaire translated to Indonesian and tested on 30 nurses, Cronbach’s Alpha value is 0.858 and the reliability value is 0.315-0.684. Data analysis was conducted by using SPSS, univariate with descriptive statistical methods: mean, median, standard deviation, and bivariate with analyses variant (ANOVA). Ethical tests have been carried out by the ethics committee of the Faculty of Nursing, University of Indonesia and the respective SK.266 / UN2.F12.01.2.1 / ETIK FIK 2019.

RESULT

As observed in table I, the study had a representative sample of 549 nursing workers from five accredited hospitals. The majority nurses were female (79.8%), Bachelors’ of nursing (96.6%) and staff nurse positions in their hospital (58.3%). Most of respondents held level 3 in clinical nurse ladder (38.3%). Mean age of nurses is 36.7 (9.4) years old and mean years of experience is 13.0 (10.5) years.

Table I: Socio-demographic and work profile of nurses (n=549)

Variable	H (A)	H (B)	H (C)	H (D)	H (E)	All
Frekuensi (%)						
	Fre kuensi (%)	Fre kuensi (%)	Fre kuensi (%)	Fre kuensi (%)	Fre kuensi (%)	Fre kuensi (%)
Gender						
Male	20 (17.9)	9 (8.3)	29 (26.4)	24 (23.1)	29 (25.4)	111 (20.2)
Female	92 (82.1)	100 (91.7)	81 (73.6)	80 (76.9)	85 (74.6)	438 (79.8)
Higheest degree						
Bachelor	111 (99.1)	108 (99.1)	105 (95.5)	94 (90.4)	114 (100)	532 (96.9)
Master	1 (0.9)	1 (0.9)	0	2 (1.9)	-	7 (1.3)
Special-ist			4 (3.6)	8 (7.7)	-	10 (1.8)

CONTINUE

Table I: Socio-demographic and work profile of nurses (n=549) (CONT.)

Variable	H (A)	H (B)	H (C)	H (D)	H (E)	All
Frekuensi (%)	Frekuensi (%)	Frekuensi (%)	Frekuensi (%)	Frekuensi (%)	Frekuensi (%)	Frekuensi (%)
Position						
Supervisor	18 (16.1)	15 (13.8)	18 (16.4)	18 (18.3)	18 (15.8)	88 (16)
Nurse in charge	26 (23.2)	24 (22.0)	9 (8.2) 8 (7.3)	10 (9.6)	24 (21.1)	93 (16.9)
Head nurse	11 (9.8)	0		6 (3.8)	1 (0.9)	26 (4.7)
Staff nurse	48 (42.9)	58 (53.2)	75 (68.2)	69 (66.3)	70 (61.4)	320 (58.3)
Other	9 (8.0)	12 (11.0)	0	0	1 (0.9)	22 (4.0)
Clinical nurse ladder						
Level 1	12 (10.7)	47 (43.1)	40 (36.4)	46 (44.2)	61 (53.5)	206 (37.5)
Level 2	13 (11.6)	8 (7.3)	20 (18.2)	23 (22.1)	22 (19.3)	86 (15.7)
Level 3	79 (70.5)	49 (45.0)	23 (20.9)	31 (29.8)	31 (27.2)	213 (38.8)
Level 4	8 (7.1)	5 (4.6)	13 (11.8)	4 (3.8)	0	30 (5.5)
Level 5	0	0	14 (12.7)	0	0	14 (2.6)
Age, Mean (SD)	39.6 (8.5)	36.9 (9.6)	36.5 (10.3)	36.1 (9.4)	32.7 (7.8)	36.7 (9.4)
Years of experience, Mean (SD)	16.8 (9.8)	12.9 (11.0)	13.6 (10.8)	13.4 (10.5)	8.6 (8.9)	13.0 (10.5)

As shown in Table II how the data of the analysis, which consists of the statistical association between the five groups of workers of the hospitals. There were significant differences patient safety implementation between hospitals in patient identification (p-value = 0.001), right location, patient, procedure of surgery (p-value <0.001), reducing the risk of infection (p-value = 0.001), and reducing the risk patient fall (p-value = 0.002). Overall Hospital A gets the highest score (91.9%) and Hospital D gets the lowest score (88.2%) in patient safety implementation.

Table II: The Differences of Patient Safety Goals' Implementation Among Five Accredited Hospitals (n = 549)

	Di-mension	Hospital	Mean	SD	Min	Max	Percentage of maximum value	p-value
Patient identification#	A	23.8	1.9	19	25	95.2	0.001*	
	B	23.7	1.9	18	25	94.8		
	C	23.6	2.0	17	25	94.4		
	D	22.6	2.6	15	25	90.2		
	E	23.4	2.1	18	25	93.6		
	All	23.4	2.1	17.4	25	93.6		
Improved effective communication##	A	49.0	5.0	34	55	89.0	0.087	
	B	49.4	5.0	33	55	89.8		
	C	48.4	4.5	37	55	87.8		
	D	47.7	5.4	32	55	86.7		
	E	49.1	5.1	37	55	89.3		
	All	48.7	5.0	34.6	55	88.5		
Improve High Alert drug safety##	A	9.0	1.1	6	10	90	0.068	
	B	9.0	1.1	6	10	90		
	C	9.1	0.9	6	10	91		
	D	9.0	1.1	6	10	90		
	E	9.0	1.0	6	10	90		
	All	9.0	1.1	6	10	90		
Right location, patient, procedure of surgery+	A	9.2	1.0	7	10	92	<0.001*	
	B	8.6	1.6	3	10	86		
	C	8.3	1.7	2	10	83		
	D	8.7	1.2	5	10	87		
	E	9.0	1.1	6	10	90		
	All	8.8	1.3	4.6	10	88		
Reducing the risk of infection**	A	32.8	2.8	27	35	93.7	0.001*	
	B	32.8	2.8	25	35	93.7		
	C	32.6	2.7	27	35	93.1		
	D	31.3	3.7	21	35	89.4		
	E	32.5	3.0	24	35	92.9		
	All	32.4	3.0	24.8	35	92.3		
Reducing the risk of falling patient+++	A	41.2	3.8	32	45	91.6	0.002*	
	B	41.8	3.6	32	45	92.9		
	C	41.2	3.7	34	45	91.6		
	D	39.6	4.7	27	45	87.1		
	E	40.8	4.3	29	45	90.7		
	All	40.9	4.0	30.8	45	90.1		

CONTINUE

Table II: The Differences of Patient Safety Goals' Implementation Among Five Accredited Hospitals (n = 549) (CONT.)

Di-mension	Hos-pital	Mean	SD	Min	Max	Per-centage of maxi-mum value	p-value
Over-all	A	164.9	13.8	132	180	91.9	0.007*
	B	165.4	13.4	125	180	91.5	
	C	163.1	13.4	131	180	90.6	
	D	158.7	17.4	107	180	88.2	
	E	163.8	14.7	124	180	91.1	

p-value*(Anova); $\alpha < 0.05$

* For Patient identification Hospital D differed from Hospital A, p=0.001, Hospital B, p=0.002, Hospital C, p=0.015. Hospital D no differed from Hospital E, p=0.482

** For effective communication and high alert drug safety no differed between five hospitals p=0.087, p=0.068

*For right location, patient, procedure of surgery, Hospital A differ from Hospital B, p=0.004, Hospital C, p= 0.001. Hospital B differ from Hospital A and Hospital E, bu no differ from Hospital E. Hospital C differ from Hospital A and Hospital E, p= 0.001.

** For reducing the risk of infection, Hospital D differed from Hospital A, p=0.037, Hospital B, p=0.002, Hospital C, p=0.024 and Hospital E, p=0.026

***For reducing the risk of falling patient Hospital D differed from hospital; Hospital A, p=0.037, Hospital B, p= 0.001; Hospital C, p=0.040, but not differ from Hospital E, p= 0.267

The difference in patient identification between Hospital D and Hospital A, B, and C from the survey namely not identifying the patient during hand over (10%), identification during drug administration and transfusion (3%) and when nursing assessment and intervention (4%-5%). While the difference in effective communication there is still a statement that bad implementation in interdisciplinary communication (4%), patient transfer (1%), and effective communication training (3%). The difference between Hospital D and other hospitals in the right location, patient, and procedure of surgery is that there are nurses who do not mark site the area to be operated (2%) and do not fill out the check list on the preoperative observation sheet (5%). In the implementation of infection control there are differences in implementation where nurses do not perform complete hand hygiene (4%), do not use personal protective equipment (8%), do not desinfect the environment properly (9%), do not educate patients and families (7%)), and dispose of needles not in the safety box (4%). On the risk of falls, nurses did not conduct a fall risk assessment (3%), reassess the fall risk (6%), restrain management (19%), and did not educate patients and families about the risk of falling (7%).

Table III shows that there is a fairly strong correlation between patient safety implementation and nurses' perceptions of accreditation, $p < 0.001$, $r = 0.461$. This indicates that if nurses' perception is good about accreditation, the implementation of patient safety will increase.

Table III Correlation Nurses' Perceptions of Accreditation And Patient Safety Implementation

Variable	Nurses' Perception of Accreditation	
	r	p value
Patient Safety Imple-mentation	0.461	<0.001)

Table IV shows that there are differences in nurses' perceptions between hospitals on hospital accreditation with a p value of <0.05. Perbedaan persepsi perawat The nurse's perception of Hospital A has the highest value than the others with a mean of 231.9. Meanwhile, Hospital D has the lowest perception among hospitals with mean of 223.0.

Table IV Nurses' Perception of Accreditation System and Patient Safety Implementation

Categories	HA		HB		HC		HD		HE		p-value
	Mean (SD)	(Mean SD)	(Mean SD)	(Mean SD)	(Mean SD)	(Mean SD)	(Mean SD)	(Mean SD)	(Mean SD)	(Mean SD)	
Leadership, commitment and support	39.4 (3.9)	37.5 (4.1)	37.5 (3.8)	35.1 (4.6)	38.6 (3.9)	<0.001					
Strategic quality planning	30.3 (2.9)	29.3 (2.9)	29.6 (2.9)	28.1 (2.9)	29.2 (3.1)	<0.001					
Human resources utilization	26.6 (2.9)	25.3 (3.6)	25.9 (3.3)	24.3 (3.2)	26.3 (3.2)	<0.001					
Quality management	25.6 (2.8)	23.9 (2.9)	25.1 (2.3)	23.7 (2.9)	25.5 (2.6)	<0.001					
Quality Result	19.6 (2.6)	18.7 (3.7)	19.1 (1.9)	17.6 (2.9)	19.2 (2.7)	<0.001					
Using of Data	29.2 (2.9)	28.3 (2.8)	28.6 (2.6)	27.5 (3.1)	28.6 (3.0)	0.002					
Staff involvement	21.9 (2.1)	21.5 (2.0)	21.4 (2.0)	20.4 (2.4)	21.8 (2.1)	<0.001					
Benefit of accreditation	39.3 (4.1)	38.5 (3.8)	37.8 (4.0)	35.9 (4.1)	38.0 (4.6)	<0.001					
All	231.9 (18.6)	223.0 (18.7)	224.9 (17.0)	212.5 (21.3)	227.1 (20.1)	<0.001					

DISCUSSION

The accreditation process is designed to ensure compliance and continuous improvement so that changes in the organization and clinical practice. Joint Commission International accreditation and certification is recognized as a global leader for health care quality of care and patient safety (12). Nurses' perception to accreditation impact was a significant predictor of perception of quality of care, one of them was direct patient care (13). The differences in the implementation of patient safety are caused by cultural differences in each hospital which will affect the attitude and culture of nursing (14).

The National Hospital Accreditation Standard requires patient identification in two or three of identification, namely the patient's name, date of birth, and medical record number. The results of the study show that all accredited hospitals have implemented patient identification well. However, there are differences in implementation between hospitals, there are those who apply Patient identification more often only when administering drugs to patients or only when the first time the assessment of the patient is entered. In some hospitals, patient identification is still not carried out at the time of handover and giving interventions to patients. Patient identification is also carried out before blood transfusions, administering drugs, conducting assessments, handover, and prior to nursing intervention. According to a study from Malawi 34% of hospital staff recalled a misidentification event in the preceding year. Choices of solutions are encourage routine use of identifier and improve bedside identification procedures (15).

Ineffective communication can harm the patients. Communication errors often occur when communicating verbally. The results showed that effective communication in five accredited hospitals was not optimal. There is still ineffective communication, especially in interdisciplinary communication and effective communication training. Assertive communication training has been shown to improve the performance of clinical team (16),(17).

Training through continuing professional development builds nurses' satisfaction. Nurses' satisfaction improves the quality of care and patient safety (18). A systematic review study concluded that the intervention in the form of training on assertive communication was effective for health workers and improve communication with doctors (19) (20). The method using the Transfer Note (NT) and the emission of the modified early warning score (MEWS) on medical records carried out in Brazil can be an example of increasing effective communication (21). Drug administration management is one of the important things that nurses do in providing care to patients. Adherence in carrying out double checks is a factor that reduces medication errors. The results showed 81% of

nurses did double check in drug administration (22). This study also found 22.2% of drug administration, 63.4% of errors when administering drugs to patients (administration error) and 18.3% of documentation errors. Of the errors in administration errors, 59.1% were due to the wrong administration technique or method. Another study from systematic review found that there is insufficient evidence to assess the effectiveness of double checks compared to single checks that cause medication errors (23)(24). In Indonesia there is still little application of double check by using the six right principles, namely the right patient, the right time, the right drug, the right method, the right documentation, and the right dose. The study found that only 51.9% of nurses performed six procedures at a large hospital in Jakarta and 69.4% at Yogyakarta Hospital (25),(26). Moshtaghi et al (2017) found that 142 cases of surgical errors evaluating the causes of wrong site surgery due to leadership factors (30.9%), human factors (23.4%), and miscommunication (10%) (27). Another study stated that the results of the literature show the effect of checklists on increasing patient safety and preventing wrong site surgery (28).

Infection prevention and control is an effort made by all health workers, especially nurses who come in direct contact with patients. One of the most important things is to maintain hand hygiene through hand washing. In this study, almost all hospitals performed hand hygiene, syringe awareness, environmental control, using disinfection, and family education were carried out well and very well. However, there is still one hospital that is still lacking in the application of the use of PPE, environmental control, and family education. Infection of the operating area can be avoided through the intervention and supervision of the multi-disciplinary profession. Nurses can carry out wound care interventions, intraoperative infection control, infection prevention, surgical precautions, and skin checks to prevent infection in the surgical area (29). Research in a hospital in Jakarta found the need to increase the role and function of IPCN nurses to reduce infection, especially in training and awarding (30).

In this study, the attention that is still lacking in implementation is the attention of nurses to the patient's physiological and pathological problems, reassessment of fallen patients, and restraint management which still needs to be improved. This study also found that the assessment of patients was still not optimal so that patients often fell in one hospital in Jakarta. A qualitative study conducted at one hospital stated that for the initial assessment of falling patients, almost all of them were filled in the form, but for the reassessment it stated "seeing the condition", "every other day". "Need to be reminded", "not like the initial assessment". Various reasons for not doing the reassessment are lack of personnel, busyness, lack of supervision, the patient's condition is unstable, and there is no source of

information from the family (8). Other study found that organization factors were more big effect on the patient safety implementation than individual factors (31).

Differences in the implementation of patient safety in each hospital shown in tables III and IV are caused by differences in nurses' perceptions of the accreditation system. Nurses' perceptions of the accreditation system affect the implementation of patient safety. The commitment and support of leadership, strategic planning, use of resources, quality of management, results of data use, staff involvement and benefits of accreditation improve implementation of patient safety. Hospitals with different characteristics cause the implementation of patient safety to also be different, for example, the H C is the lowest in the accuracy of the operating area because H C is a special hospital for the heart, so it rarely gives signs in the operating area because the heart is a single organ. Errors in the operating area often occur due to confusion between left and right. Laterality was a major concern with surgical procedures involving symmetrical structures (32)

The limitation of this study was that it did not further detect the causes of differences in knowledge, safety culture, and patient characteristics in each hospital. However, researchers found differences in nurses' perceptions of accreditation affect the implementation of patient safety.

CONCLUSION

Nationally accredited hospitals with Paripurna Achievement coupled with JCI accreditation becomes references for other hospitals in implementing patient safety goals. Efforts to improve quality and patient safety are not limited to hospital accreditation or re-accreditation. This study found that the five hospitals that gained Paripurna Achievement accreditation in the implementation of patient safety were exceptionally good, namely 88.2% to 91.9%, even though they were not optimal. Implementation of patient safety that needs to be improved is to improve communication effectiveness, which is 88.5%.

There were differences among hospitals in the implementation of patient identification (p-value 0.001), accuracy of location, procedure, and patients in surgery (p-value <0.001), reduction in infection (p-value 0.001 and patients fell (p-value 0.007). There was no difference in Improved effective communication (p-value=0.087 and high alert drug alertness (p-value 0.072). there is a strong correlation between patient safety implementation and nurses' perceptions of accreditation, $p < 0.001$, $r = 0.461$. This indicates that if nurses' perception is good about accreditation, the implementation of patient safety will increase. Patient safety always carried out continuously implemented by the hospital leadership.

Positive nurses' perception of accreditation will improve patient safety implementation in hospital.

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