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Factors influencing the implementation of patient safety in the inpatient room of Mitra Medika Hospital Amplas Medan Indonesia

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Abstract

Patient Safety is a very global problem in the world of health. Reports of patient safety incidents in Indonesia based on their type from 145 reported incidents obtained near misses (KNC) as many as 69 cases (47.6%), KTD as many as 67 cases (46.2%), and others as many as 9 cases (6.2%).

The research design used in this study is Cross Sectional. The population in this study was 89 nurses and the sample was taken by total sampling. The data collection method was primary data and secondary data. The data analysis used was the binary logistic regression test. The results of the study showed the influence of organization and management with a sig of change value of $0.000 < \alpha 0.005$, interaction and teamwork with a sig of change value of $0.000 < \alpha 0.005$ and the importance of documentation with a sig of change value of $0.000 < \alpha 0.005$ on the implementation of patient safety at Mitra Medika Hospital Amplas. While the patient-related factor variables with a p-value = $0.624 > \alpha = 0.005$, increasing patient safety and quality with a p-value = $0.395 > \alpha = 0.005$, and evaluating and monitoring with a p-value = $0.730 > \alpha = 0.005$ did not have an effect on the implementation of patient safety at Mitra Medika Hospital Amplas Medan.

It is hoped that this study can be used as actual input for nurses and Hospital management regarding the implementation of patient safety. It is recommended to increase interaction between teams, evaluation, and make the patient safety program a priority in the hospital.

Keywords: Patient safety; Management; Nurses; Hospital; Interaction and teamwork; Importance of documentation; Patient-related factors; Increasing patient safety and quality; Evaluating and monitoring

1. Introduction

Patient Safety is a very global problem in the world of health. Patient safety can also be interpreted as a sector discipline in health services that applies safety science methods to achieve a trusted health service system. In realizing a trusted health service system, several things are needed that can support the system implemented in hospitals such as, nurse skills, level of knowledge, and attitudes. Attitudes play a very important role in the implementation of the health service system, especially in the implementation of patient safety. In the patient safety system, there are factors that influence the implementation of patient safety, this can hinder or become an obstacle in implementing the patient safety system and also affect the quality of services in the hospital.

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In 2011, WHO members and various countries agreed to the World Health Assembly resolution on patient safety. Various countries in the world are trying to build to improve the quality and safety of services and governments in various countries are also very aware of the importance of educating health professionals by providing an understanding of the principles and concepts of patient safety. Incidents related to patient safety are increasingly entering the legal realm and even to the courts. One of the important components that helps realize the patient safety service system in Hospital services is infrastructure and equipment, as stated or explained in Law of the Republic of Indonesia Number 44 of 2009 that infrastructure must meet the standards of service, security and occupational safety and health of Hospital implementation, and must be well maintained and functioning. To achieve this, good management is needed in related agencies, namely the logistics section starting from planning, budgeting, procurement, storage and distribution, as well as recovery and disposal.

The behavior of nurses with the ability of nurses plays a very important role in the implementation of patient safety. Unsafe behavior, forgetfulness, lack of attention/motivation, carelessness, inaccuracy and the ability to not care about and maintain patient safety are at risk for errors and will result in injury to patients, in the form of Near Miss (Near Injury Event/KNC) or adverse Event (Unexpected Event/KTD) then to reduce the level of errors can be done by modifying behavior. Nurses must involve cognitive, affective, and actions that prioritize patient safety. The next factor is the supporting factor consisting of the physical environment and the availability or unavailability of health facilities or means. The last factor is the driving factor consisting of the behavioral attitudes of health workers or other officers who are reference groups of community behavior.

WHO publication in 2014, collected hospital research figures in various countries: America, England, Denmark, and Australia, found KTD with a range of 3.2-16.6. In the United States, medication errors occur in around 1.5 million people causing death in several thousand people each year and costing around \$ 3.5 million. From the results of an international survey of five countries conducted by Communito Lectures, Ramsay Health Care Clinical Governance Unit in 2012, in adult patients who were sick and treated showed 19% believed that an error had been made, 11% believed there was a drug or dosage error, and 13% believed that serious health problems suffered were caused by errors in service or care. The Patient Safety Incident Report in Indonesia based on its type from 145 reported incidents, there were 69 cases of near misses (KNC), 67 cases of KTD (46.2%), and others 9 cases (6.2%).

The achievement of priority patient safety target indicators of Mitra Medika Hospital Amplas in 2022 includes compliance with installing patient identity bracelets, accuracy in carrying out TBaK when receiving verbal instructions via telephone, compliance with storing concentrated electrolytes, compliance with implementing the Surgical Safety Checklist, compliance with washing the hands of doctors and nurses, and compliance with efforts to prevent the risk of injury due to patient falls in hospitalized patients. Of the six aspects of the indicator, there are fluctuations in achievement that are not yet optimal, namely in the indicator of compliance with storing concentrated electrolytes with the highest achievement in November, namely 99.49%, compliance with washing the hands of doctors with the highest achievement in May, namely 95% and nurses, 90% and compliance with efforts to prevent the risk of injury due to patient falls in hospitalized patients with the highest achievement in July, namely 77.64%. Where the aspect that is least in accordance with the standard is compliance with efforts to prevent the risk of injury due to patient falls in hospitalized patients with an average from May-December 2022, namely 61.67%.

2. Research Methodology

The type of research used is quantitative research with an analytical survey research design with a Cross-sectional study approach which aims to measure the factors that influence the implementation of patient safety in inpatient rooms in order to obtain a comprehensive picture of the implementation of patient safety in hospitals. This study uses primary data and secondary data to measure the factors that influence the implementation of patient safety in inpatient rooms. This research was conducted at Mitra Media Hospital Amplas located at Sisingamangaraja Street No. 11 Medan. The strategic location makes it easier for the author to collect data for research so that it is hoped that the assessment of factors influencing the implementation of patient safety can be fulfilled. This research was conducted in July - August 2022. The population in this study were inpatient health workers at Mitra Medika Hospital Amplas, the population was 89 people. Sampling was carried out by total sampling. According to Sugiyono, the total sampling technique is a sampling technique where the number of samples is the same as the population. The reason for taking total sampling is because the population is less than 100, the entire population is used as a research sample. The sample size in this study was inpatient nurses at Mitra Medika Hospital Amplas. With a population of 89 nurses, the number of samples used is 89 (the entire population). Data analysis for primary data uses quantitative descriptive analysis. Univariate Analysis Analysis that describes a single variable between both independent and dependent variables in the form of a frequency distribution. Bivariate analysis to determine whether there is a relationship between evaluation and the performance of implementing nurses. The analysis used is the Chi-Square test analysis with a confidence level of 95% (<0.05)

Multivariate analysis is used to see the overall influence of the independent variable, namely evaluation, on the performance of implementing nurses. The analysis used is multiple ordinal regression with the consideration that this analysis technique provides the most dominant variable answer category that influences the performance of implementing nurses at a confidence level of 95% ($\alpha = 0.05$) and the variables that are candidate models have a p value <0.25 in the bivariate test.

3. Results and discussion

Table 1 Distribution of Characteristics Respondent

No	Characteristic	f	%
Gender			
1	Female	82	92.13
2	Male	7	7.87
Total		89	100
Background of Education			
1	Diploma of Nursing	75	84.27
2	Bachelor of Nursing	14	15.73
Total		89	100

It is known that the average respondent of Nurses at Mitra Medika Hospital Amplas is female, which is 82 people (92.13%) and the respondents who are male are 7 people or 7.87%. Based on the last education of the nurses studied, there were 75 people (84.27%) with the last education of Diploma and 14 nurses with the last education of Bachelor is (15.73%).

Table 2 Organization and Management with Implementation of Patient Safety in the Inpatient Room of Mitra Medika Hospital Amplas

	Organization and Management	Implementation of Patient Safety				Total		Sig-p
		Lack		Good		f	%	
		f	%	f	%			
1	Lack	13	14.6	2	2.2	15	16.9	0.000
2	Good	0	0	74	83.1	74	83.1	
Total		13	14.6	76	85.4	89	100	

Based on table 2 organizations and management with the implementation of patient safety, it is known that from 89 respondents (100%) with the results of the organization and management that are lacking, there are also 13 people (14.6%) who have poor implementation of patient safety and 2 people (2.2%). Furthermore, with the results of the organization and good management, there are 0 people (0%) who have poor implementation of patient safety and 74 people (83.1%). The results of the chi-square test show that the fisher exact value of the significant probability of the organization and management is p-value = 0.000 $<\alpha = 0.05$. This proves that there is a relationship between organization and management with the implementation of patient safety at the Mitra Medika Hospital Amplas.

Based on table 3 Interaction and Teamwork with the implementation of patient safety, it is known that as many as 89 respondents (100%) with the results of Interaction and Teamwork that are lacking have the implementation of patient safety that is also lacking as many as 3 people (3.4%) and good as many as 4 people (4.5%). Furthermore, with the results of good organization and management, there are 10 people (11.2%) who have poor implementation of patient safety and 72 people (80.9%). Based on the results of the chi-square test, it shows that the fisher exact value of the significant probability of organization and management is p-value = 0.061 $>\alpha = 0.05$. This proves that there is no

relationship between Interaction and Teamwork with the implementation of patient safety at the Mitra Medika Hospital Amplas.

Table 3 Team Interaction and Collaboration with the Implementation of Patient Safety in the Inpatient Room of Mitra Medika Hospital Amplas

	Team Interaction and Collaboration	Implementation of Patient Safety				Total		Sig-p
		Lack		Good		f	%	
		f	%	f	%			
1	Lack	3	3.4	4	4.5	7	7.9	0.061
2	Good	10	11.2	72	80.9	74	83.1	
Total		13	14.6	76	85.4	89	100	

Table 4 Patient Factors with the Implementation of Patient Safety in Inpatient Rooms Mitra Medika Hospital Amplas

	Patient Factors	Implementation of Patient Safety				Total		Sig-p
		Lack		Good		f	%	
		f	%	f	%			
1	Lack	1	1.1	5	5.6	6	6.7	0.624
2	Good	12	13.5	71	79.8	83	93.3	
Total		13	14.6	76	85.4	89	100	

Based on table 4 patient factors with the implementation of patient safety, it is known that as many as 89 respondents (100%) with the results of Patient Related Factors who lack the implementation of patient safety are also 1 person (1.1%) and good as many as 5 people (5.6%). Furthermore, with the results of good Patient Related Factors, there are 12 people (13.5%) who lack the implementation of patient safety and 71 people (79.8%) who are good. Based on the results of the chi-square test, it shows that the fisher exact value of the significant probability of Patient Related Factors is $p\text{-value} = 0.624 > \alpha = 0.05$. This proves that there is no relationship between Patient Factors and the implementation of patient safety at the Mitra Medika Hospital Amplas.

Table 5 Improving Patient Safety and Quality with the Implementation of Patient Safety in the Inpatient Room of Mitra Medika Hospital Amplas

	Improving Patient Safety and Quality	Implementation of Patient Safety				Total		Sig-p
		Lack		Good		f	%	
		f	%	f	%			
1	Lack	1	1.1	12	13.5	13	14.6	0.395
2	Good	12	13.5	64	71.9	76	85.4	
Total		13	14.6	76	85.4	89	100	

Based on table 5 Improving Patient Safety and Quality with the implementation of patient safety, it is known that as many as 89 respondents (100%) with the results of Improving Patient Safety and Quality who are lacking have the implementation of patient safety which is also lacking as much as 1 person (1.1%) and the good ones as much as 12 people (13.5%). Furthermore, with the results of Improving Patient Safety and Quality which are good, there are 12 people (13.5%) who are lacking in patient safety and the good ones as much as 64 people (71.9%). Based on the results of the chi-square test, it shows that the fisher exact value of the significant probability of Improving Patient Safety and Quality is $p\text{-value} = 0.395 > \alpha = 0.05$. This proves that there is no relationship between Improving Patient Safety and Quality with the implementation of patient safety at the Mitra Medika Hospital Amplas.

Table 6 The Importance of Documentation in the Implementation of Patient Safety in the Inpatient Room of Mitra Medika Hospital Amplas

	The Importance of Documentation	Implementation of Patient Safety				Total		Sig-p
		Lack		Good		f	%	
		f	%	f	%			
1	Lack	9	10.1	11	12.4	20	22.5	0.000
2	Good	4	4.5	65	73	82	77.5	
Total		13	14.6	76	85.4	89	100	

Based on table 6 the importance of documentation with the implementation of patient safety, it is known that from 89 respondents (100%) with the results of the importance of documentation that are lacking have the implementation of patient safety that is also lacking as many as 9 people (10.1%) and good as many as 11 people (12.4%). Furthermore, with the results of the importance of good documentation, there are 4 people (4.5%) who have poor implementation of patient safety and 65 people (73%) who have good. Based on the results of the chi-square test, it shows that the fisher exact value of the significant probability of the importance of documentation is $p\text{-value} = 0.000 < \alpha = 0.05$. This proves that there is a relationship between the importance of documentation and the implementation of patient safety at the Mitra Medika Hospital Amplas.

Table 7 Evaluating and Monitoring with the Implementation of Patient Safety in the Inpatient Room of Mitra Medika Hospital Amplas

	Evaluating and Monitoring	Implementation of Patient Safety				Total		Sig-p
		Lack		Good		f	%	
		f	%	f	%			
1	Lack	1	1.1	6	6.7	7	7.9	0.730
2	Good	12	13.5	70	78.7	69	92.1	
Total		13	14.6	76	85.4	89	100	

Based on table 7 evaluating and monitoring with the implementation of patient safety, it is known that from 89 respondents (100%) with the results of Evaluating and monitoring who lacked the implementation of patient safety which was also lacking as much as 1 person (1.1%) and good as many as 6 people (6.7%). Furthermore, with the results of Evaluating and monitoring who were good, they had the implementation of patient safety which was lacking as many as 12 people (13.5%) and good as many as 70 people (78.7%). Based on the results of the chi-square test, it shows that the fisher exact value of the significant probability of Evaluating and monitoring is $p\text{-value} = 0.730 > \alpha = 0.05$. This proves that there is no relationship between evaluating and monitoring with the implementation of patient safety at the Mitra Medika Hospital Amplas.

Table 8 Multivariate Results

Model if Term Removed ^a						
Variable	Model Log Likelihood	Change in -2 Log Likelihood	df	Sig. of the Change		
Step 1 KATO	-154,993	298,206	1	,000		
Step 2	KATO	300,790	1	,000		
	KATI	-8,473	10,217	1	,001	
Step 3	KATO	-730,857	1461,713	1	,000	
	KATI	-41,397	82,794	1	,000	
	KATD	-38,162	76,323	1	,000	

a. Based on conditional parameter estimates

Stepwise logistic regression test stages:

- In the first step, variable O is entered into the model and the sig of change value is obtained as $0.000 < \alpha 0.005$; so that variable O can be continued to step 2.
- In the second step, the Organization variable is entered plus a new variable, namely I and the sig of change is obtained as $0.001 < \alpha 0.005$; so that variable O and variable I can be continued to step 3
- In the third or final step, variable O, variable I and a new variable, namely the document variable, are entered and the sig of change for variable O is obtained as 0.000, variable I is 0.000 and variable D is $0.000 < \alpha 0.005$.
- From the results of the three steps above, it can be concluded that the three variables have an influence on variable y (patient safety).

3.1. Organization and Management of Patient Safety Implementation

Berwick's theory explains the chain effect of improving service quality, involving initiatives from the patient level, service provider, organization and external environment. The four levels in Berwick's theory each have roles that are interrelated with each other (53). The World Health Organization in 2009 stated that effective leaders in instilling a clear culture, supporting staff efforts, and not being punitive are needed to create a strong patient safety culture and reduce Adverse Events (KTD). The leadership aspect referred to here is leadership at the basic level, such as the head of the room or head of the unit. This is because patient safety is influenced by staff habits or errors that occur (54). Patient safety culture must start from the leader, this is in line with what was expressed by the National Quality Forum (NQF) namely the role of senior leaders is a key element in designing, reforesting, and maintaining a safety culture, leadership as an important subculture. This method has been exemplified by the National Quality Forum (NQF) by "improving patient safety by creating a safety culture" by focusing on leadership structure and systems.

3.2. Interaction and Teamwork on Patient Safety Implementation

Teamwork is a small group of people with complementary skills who are committed to a common goal, performance targets and approaches that they share responsibility for. Cooperation is a form of behavior from nurses in working in a team because it makes individuals remind each other, correct, communicate so that the opportunity for errors can be avoided.

The tabulation results between Interaction and Teamwork with the implementation of patient safety, it is known that as many as 89 respondents (100%) with poor Interaction and Teamwork results have poor patient safety implementation as many as 3 people (3.4%) and good as many as 4 people (4.5%). Furthermore, with good organizational and management results, 10 people (11.2%) have poor patient safety implementation and 72 people (80.9%) have good patient safety implementation. Based on the results, it is proven that there is no relationship between Interaction and Teamwork with the implementation of patient safety at Mitra Medika Hospital Amplas ($p\text{-value} = 0.061 > \alpha = 0.05$).

These results are in accordance with the research of Fridawaty et al. in 2016 which showed that teamwork was not related to the implementation of patient safety by nurses at Ajjappanngge Soppeng Regional Hospital. Meanwhile, according to WHO in 2012, effective teamwork in providing health services can have a direct positive impact on patient safety. This is supported by the research of Julia Dinius, et. Al in 2020 showing that higher interprofessional teamwork was associated with better levels of patient safety in German hospitals. On that basis, researchers recommend the implementation of team interventions to improve patient safety. The second important finding is the impact of professional groups, work experience, and length of service on perceptions of interprofessional teamwork, and patient safety.

3.3. Patient Factors on Patient Safety Implementation

Patient participation in health care planning, service development and research is a major policy component in many countries. Patients depend on health care professionals, and their decisions. However, their involvement in safety initiatives is essential for long-term care and improving patient safety. Some authors suggest that health care providers rely on patients to check their care to ensure their own safety, and in adverse events, patients are the first link in the reporting chain. Benefits of patient participation include increased awareness of adverse events and patient empowerment.

Fifty-eight percent of physicians surveyed for a study looking at perceptions of medical errors felt that patients were very often or somewhat responsible for medical errors in their care, suggesting that they may consider the patient's

role in reducing their own vulnerability to occurrence. This view is important because the knowledge and beliefs of health care professionals undoubtedly play a significant role in determining patient engagement. It has been reported that the way health care professionals interact with patients influences patient participation in health care. Patient participation can be enhanced by health care professionals who respond positively to patients' needs and views and who provide feedback on patient concerns

3.4. Improving Patient Safety and Quality to Patient Safety Implementation

This proves that there is no relationship between Improving Patient Safety and Quality and the implementation of patient safety at Mitra Medika Hospital Amplas. (p-value = 0.395 > α = 0.05) Safety culture is a factor that shapes the behavior of health care professionals to see patient safety as a top priority. Helling's research results state that assessing safety culture in hospitals is a challenge, so accurate measuring tools are needed in its assessment. Safety culture influences service quality. To improve safety culture, support from management and all staff is needed. This is in line with Brennan's research which found that patient safety culture will bring new knowledge into service quality so that it will have an impact on health services related to patient safety.

Efforts made in an effort to encourage and ensure the implementation of the patient safety program are generally carried out through general orientation for each new employee and briefings to remind officers to always be vigilant and supervise the implementation of health service tasks in order to avoid Adverse Events (KTD) in patients. Also encourage officers to always take action on patients based on existing procedures and report any errors that lead to Adverse Events (KTD). Motivate both medical and non-medical work teams, and carry out sterilization techniques. Provide education and training, conduct discussions, exchange opinions, and require the use of disposable equipment to be discarded or not used again. This can be a focus at Mitra Medika Hospital Amplas in ensuring the implementation of the patient safety program.

3.5. The Importance of Documentation for the Implementation of Patient Safety

The KARS theory when nurses receive verbal instructions by telephone from doctors using verbal communication with TBAK (write, read, reconfirm). Telephone consultation is the act of reporting the patient's condition to the doctor by telephone. Telephone communication is verbal communication carried out if according to the nurse the patient's condition requires medical action. For verbal or telephone orders, the nurse who receives the message must write it down and read it back to the person giving the message. When the nurse reports the patient's condition to the doctor using verbal communication with SBAR (situation, background, assessment, recommendation). The officer receives verbal instructions via telephone from the doctor using verbal communication with TBAK (write, read, reconfirm), the next day the doctor in charge of the patient provides confirmation. From this theory it can be concluded that nurses who have good and effective communication with doctors will create effective collaboration.

3.6. Evaluating and Monitoring the Implementation of Patient Safety

Nugroho (2012) quoted Kunarjo's opinion in the Glossary of Development Financing (1991), monitoring is a continuous effort to understand the development of certain areas of the implementation of tasks or projects that are being implemented. The purpose of monitoring is to ensure that implementation does not deviate from planning, and to build an early warning system, as an important part to ensure if there is a deviation in implementation. Supervision is the process of providing guidance, direction, encouragement, conducting observations, and evaluations of nursing actions related to patient safety. In this study, the supervisor was the hospital management. The results of evaluating and monitoring that lack the implementation of patient safety are also 1 person (1.1%) and the good ones are 6 people (6.7%). Furthermore, the results of evaluating and monitoring that are good have the implementation of patient safety that is lacking as many as 12 people (13.5%) and the good ones are 70 people (78.7%). This proves that there is no relationship between evaluating and monitoring with the implementation of patient safety at Mitra Medika Amplas Hospital. (p-value = 0.730 > α = 0.05)

4. Conclusion

- There is an influence of organization and management on the implementation of patient safety at Mitra Medika Hospital Amplas
- There is an influence of interaction and teamwork on the implementation of patient safety at Mitra Medika Hospital Amplas
- There is no influence of patient-related factors on the implementation of patient safety at Mitra Medika Hospital Amplas

- There is no influence of increasing patient safety and quality with the implementation of patient safety at Mitra Medika Hospital Amplas
- There is an influence of the importance of documentation on the implementation of patient safety at Mitra Medika Hospital Amplas
- There is no influence of evaluating and monitoring on the implementation of patient safety at Mitra Medika Hospital Amplas

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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