

Determinants of Implementation of Patient Safety Goals in District General Hospitals in Indonesia

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Abstract :

Background : Implementation of patient safety goals is still not optimal. Nurses should be aware of their role in maintaining and improving the quality of patient safety goals ; identify the correct patient, promote effective communication, increase the safety of drugs to watch out for, ensure the correct surgical site, reduce the risk of infection due to health care and reduce the risk of patient injury due to falls. The study aimed to determine the determinants of implementing patient safety goals in District General Hospitals in Indonesia.

Materials and Methods : Type of quantitative research with a cross-sectional study design. The study population totaled 130 nurses ; the technique for determining the number of samples used total sampling, sampling using a purposive sampling technique, with a total of 126 samples that met the criteria. Data collection uses seven types of questionnaire that have been tested for content and construct validity and reliability tests. Data analysis used descriptive statistical tests, Chi-Square, and Multiple Logistic Regression.

Results : The results showed that there was a relationship between knowledge ($p=0.035$), attitude ($p=0.000$), communication ($p=0.001$), teamwork ($p=0.019$), supervision ($p=0.000$), and no relationship between workload with the implementation of patient safety goals ($p = 0.952$). Supervision is the most related factor to implementing patient safety goals in District General Hospitals in Indonesia ($p\text{-value} = 0.000$) with odds ratio = 9.175 (95% CI : 3.550-23.713).

Key Words : Determinants, nurses, patient safety goals

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I. Introduction

Nurses are the spearhead in providing health services in hospitals. The most dominating health workers in hospitals are nurses, around 40-60% of the total health workers [1][2]. Nurses have always been concerned with implementing patient safety in various fields of health services [3]. Nurses should be aware of their role in maintaining the quality of patient safety. They must actively participate in realizing patient safety and preventing patient safety incidents in short and long-term care [4].

Patient safety continues to develop due to various problems that occur and endanger patients in healthcare units [5]. Even though there is growing evidence regarding the influence of implementing patient safety on the quality of health care in hospitals, events that can harm and harm patients are still being recorded in international reports. In 2017, as many as four out of 10 patients were injured in primary health care and outpatient services, where about 80% of these harms could have been prevented. Errors that predominate and harm patients are usually related to the diagnosis, prescribing, and using drugs [6].

The six patient safety goals are the basic principles of health services that are centered on the patient's right to obtain safe health care, including; 1) correctly identifying the patient, 2) promoting effective communication, 3) increasing the safety of drugs to watch out for, 4) ensure the correct surgical location, correct procedure, surgery on the correct patient, 5) reduce the risk of infection due to treatment Health and 6) reduce the risk of patient injury due to falls. However, the implementation of patient safety goals is still not optimal. This occurs due to several factors, including individual nurse factors and internal factors in hospital organizational management. The literature review results found several factors influencing nurses' application of patient safety goals in hospitals. One study in Indonesia found that 81.4% of nurses had good category knowledge and good performance. This means that the better the level of knowledge of nurses about patient safety, the better performance of nurses in implementing patient safety goals [7]. In addition, it was found that there was a positive effect of knowledge on the implementation of patient safety goals. This shows that knowledge influences the implementation of patient safety goals. Increasing nurse knowledge is very important because this can increase nurses' understanding and perception of patient safety goals [8]

In addition to the knowledge factor of nurses, several studies related to nurses' attitudes also influence the implementation of patient safety. A study in West Lithuania found that the safety attitudes of professional health workers, namely doctors, nurses, and nursing assistants, were generally positive and related to job satisfaction, teamwork, work climate, and working conditions [9]. One study at a Jakarta hospital also found that, in general, nurses' attitudes were in positive condition with an average value of 60-80%, and there was a significant relationship between the attitudes of nurses and the implementation of patient safety (p -value = 0.01). The creation of patient safety in the hospital environment cannot be separated from the attitude of nurses who are with patients 24 hours a day. The better the safety attitude of a nurse, the better the implementation of patient safety [10].

The nursing workload is part of the organization. The nursing workload consists of nursing and non-nursing activities [12]. A high workload can cause nurses fatigue and physical and cognitive impairments, increasing the risk of errors in patient treatment [13]. A study found that workload did not affect patient safety performance (p -value = 0.207). As many as 40% of staff thought there was a balance between the number of patients and nurses, and nurses felt they could complete every task given [9], likewise, with the communication factor. Non-standardized and trained communication often results in miscommunication and loss of important patient information. It can result in delays in treatment, minor medical accidents, medication negligence, length of stay, additional treatment costs, and others [14]. Research related to the implementation of effective communication has also been found in several hospitals, one of which saw the conclusion of a significant relationship between communication and the implementation of patient safety goals, and effective communication plays a vital role in communication between management, Care Provider Professionals (CPP) and other health care professionals with patients and families [15].

Teamwork factors can affect the quality of service and implementation of patient safety goals. The possibility of a patient safety incident occurring in the team is caused by the conflict, which will affect the perception or attitude of the individual in the team [16]. The role of the organization in the form of effective monitoring and evaluation can have an impact on the motivation of nurses to increase their knowledge about patient safety [17]. Supervision as a process spurs the work team to contribute actively and positively to achieving organizational goals [18]. Supervision can increase knowledge and change the behavior of nurses in carrying out tasks so that patient safety can be achieved [19].

Based on several literature reviews and the phenomena above, the importance of nurses in implementing patient safety goals in hospitals has been shown. Several factors influence the nurse's role as a determinant in implementing patient safety goals in each hospital. Therefore, research on the determinants of nurses (knowledge, attitude, workload, communication, teamwork, and supervision) in implementing patient safety goals in District General Hospitals in Indonesia is essential.

II. Material And Methods

Study Design: Cross-Sectional Study

Study Location: This research was conducted at the District General Hospital, Aceh Province, Indonesia

Study Duration: November 21, 2022, to April 27, 2023.

Sample size: 126 Nurses

Sample size calculation: Determining the sample size using the total sampling technique, totaling 130 nurses.

Subjects & selection method: Sampling used a purposive sampling technique, referring to the sample criteria with 126 samples. Four nurses were not selected as the research sample because they did not meet the criteria set by the researchers.

Inclusion criteria:

1. Nurses who are willing to be respondents.
2. Nurses who actively serve in inpatient rooms.
3. Not currently on leave from work.

Exclusion criteria:

1. Nurses who actively serve in outpatient units and emergency departments.
2. Nurses who are studying and taking leave for over a month.
3. Nurses who are unable or sick when data collection takes place.

Procedure methodology

This research was carried out after obtaining written permission from the Director of the District General Hospital where the research was conducted. The research data collection tool consists of seven types of questionnaires, namely; 1) a Questionnaire on nurse knowledge about patient safety goals, 2) a Questionnaire on

nurse attitudes about patient safety goals, 3) a Questionnaire to measure nurse workload, 4) Questionnaire to measure nurse communication, 5) Questionnaire to measure teamwork, 6) Questionnaire to measure implementation supervision adopted from the Manchester Clinical Supervision Scale 26 (MCSS 26), and 7) Questionnaire to measure the implementation of patient safety goals. All questionnaires used have been tested for content validity, construct validity, and reliability. Research data collection was carried out from March 27 to April 7, 2023, directly by distributing questionnaires to respondents after the researcher first provided information in the form of an explanation of the purpose, benefits, confidentiality of data, and research procedures. Next, the researcher asked about the respondent's willingness to participate voluntarily or not in the study by signing an informed consent form without writing their name.

Furthermore, the respondents filled out the questionnaire, lasting approximately 60 minutes. After filling out all the questionnaires, the researcher rechecked the completeness and correctness of the filling, and then the researcher terminated meet with the respondent. This research has passed the ethical from the Ethics Commission of the Faculty of Nursing, Syiah Kuala University, Banda Aceh, with the research document code 112003050123.

Statistical analysis

Data analysis used descriptive statistical tests to determine the characteristics of respondents (age, gender, education, length of work, employment status), independent variables (knowledge, attitudes, workload, communication, teamwork, supervision), and dependent variables (implementation of patient safety goals). The inferential statistical test uses the Chi-Square Test to determine whether there is a relationship between the independent variable and the dependent variable with the condition that H0 is accepted if the p-value > α (0.05). Multiple Logistic Regression Test determines the determinant factors most related to implementing patient safety goals based on the requirements for determining the candidate and the modeling stages.

III. Result

The results of the research on the determinants of the application of patient safety goals in District General Hospitals in Indonesia will be presented based on the results of descriptive and inferential statistical tests as follows:

Table-1: Frequency Distribution of Nurse Characteristics (n=126)

Characteristics	f	%
Age:		
20-35 Years	100	79,4
36-45 Years	23	18,3
46-60 Years	3	2,4
Gender:		
Female	87	69
Male	39	31
Education:		
Nurse Vocational	84	66,7
Nurse Profession	42	32,3
Length of working:		
≤ 5 Years	86	68,3
> 5 Years	40	31,7
Employment status:		
Civil Servants (PNS)	54	42,9
Contract	72	57,1

Table-1 shows that of the 126 nurses at the Regional General Hospital, 100 nurses (79.4%) are early adults (20-35 years), 87 nurses (69%) are female, 84 nurses (66.7%) vocational nurses, 86 nurses (68.3%) with working period ≤ 5 years and 72 nurses (57.1%) are contract employees.

Table-2: Frequency Distribution of Knowledge, Attitudes, Workload, Communication, Teamwork, Supervision, and Implementation of Patient Safety Goals (n=126)

Variable/Sub-variable	f	%
Knowledge:		
Good	74	58,7
Moderately	39	31
Poor	13	10,3
Attitude:		
Positive	64	50,8
Negative	62	49,2
Workload:		

Variable/Sub-variable	f	%
Hight	56	44,4
Low	70	55,6
Communication:		
Effective	62	49,2
Ineffective	64	50,8
Teamwork:		
Good	61	48,4
Poor	65	51,6
Supervision:		
Effective	59	46,8
Ineffective	67	53,2
Implementation of Patient Safety Goals:		
Good	66	52,4
Poor	60	47,6

Table-2 shows that out of 126 nurses, 74 nurses (58.7%) have good knowledge about patient safety goals, 64 nurses (50.8%) have a positive category attitude about patient safety goals, 70 nurses (55.6%)) have low category workload, 64 nurses (50.8%) communication ineffective category, 65 nurses (51.6%) poor teamwork category, 67 nurses (53.2%) supervised ineffective category, and 66 nurses (52 .4%) implementing good category patient safety goals in District General Hospitals in Indonesia.

Table-3: Relationship of Knowledge, Attitude, Workload, Communication, Teamwork, and Supervision with Implementation of Patient Safety Goals (n=126)

Determinan	Implementation of Patient Safety Goals						p-value
	Good		Poor		Total		
	f	%	f	%	f	%	
Knowledge:							
Good	43	58,1	31	41,9	74	100	0,035
Moderately	14	35,9	25	64,1	39	100	
Poor	9	69,2	4	30,8	13	100	
Attitude:							
Positive	45	70,3	19	29,7	64	100	0,000
Negative	21	33,9	41	66,1	62	100	
Workload:							
Hight	30	53,6	26	46,4	56	100	0,952
Low	36	51,4	34	48,6	70	100	
Communication:							
Effective	42	67,7	20	32,3	62	100	0,001
Ineffective	24	37,5	40	62,5	64	100	
Teamwork:							
Good	39	63,9	22	36,1	61	100	0,019
Poor	27	41,5	38	58,5	65	100	
Supervision:							
Effective	45	76,3	14	23,7	59	100	0,000
Ineffective	21	31,3	46	68,7	67	100	

In table-3, it shows that there is a relationship between knowledge, attitude, communication, teamwork, and nurse supervision (all p-values < 0.05) and no relationship between workload (p-value > 0.05) with the implementation of patient safety goals in District General Hospitals in Indonesia.

Table-4: Final Stage Modeling Factors most related to the Implementation of Patient Safety Goals (n=126)

Factors	B	p	Odds Ratio (OD)	95 % CI
Attitude	1,987	0,000	7,291	2,787-19,074
Communication	1,473	0,002	4,364	1,743-10,926
Supervision	2,216	0,000	9,175	3,550-23,713

Table 4 shows that the factor most related to implementing patient safety goals is supervision, with p-value = 0.000 and odds ratio = 9.175 (95% CI: 3.550-23.713), meaning that nurses who are supervised effectively have nine times better chances of implementing patient safety goals compared to supervised nurses is not effective in District General Hospitals in Indonesia.

IV. Discussion

The results of this study indicate that the factor of nurse knowledge is related to the application of patient safety goals in the District General Hospital, Indonesia (p-value = 0.035). This study's results align with research conducted at Malang Hospital; the four factors studied are; knowledge, motivation, supervision, and organizational influence. The factors most related to the implementation of the six patient safety goals include; 1) correctly identifying the patient, 2) promoting effective communication, 3) increasing the safety of drugs to watch out for, 4) ensuring the correct surgical location, correct procedure, surgery on the correct patient, 5) reduce the risk of infection due to treatment Health and 6) reducing the risk of patient injury due to falling is a knowledge factor with an odds ratio = 17.299, the better the nurse's knowledge of patient safety goals, the better the implementation of patient safety goals by nurses [2]. Nurses have the ability and authority to carry out nursing interventions based on the knowledge obtained from the nursing education level. This is supported by the characteristics of the respondents in this study 100% were graduates of higher education in nursing, with the last education being professional nurses 32.3% and 66.7% vocational nurses. Efforts to implement patient safety depend on nurses' knowledge level; nurses with good knowledge will be able to apply patient safety consistently, last a long time, and can deal with various complex problems in health services [11].

Likewise, with attitudes, the results of this study concluded that there was a relationship between nurses' attitudes and the implementation of patient safety goals at the District General Hospital, Indonesia (p-value = 0.000). Attitudes are evaluative statements, both favorable and unfavorable, about objects, people, or events. Attitudes are complex; attitudes reflect how you feel about something. To fully understand attitudes, we must consider their fundamental characteristics or components [12]. Several studies have found significant results on the nurse's attitude factor, the better the nurse's attitude regarding patient safety, the better the application of patient safety goals [4][9][13].

The workload factor is patient days, i.e., the number of procedures and patient visits. The nurse's workload is a collection of work or activities carried out by nurses in a service unit of their duties [18]. The results of this study indicate the workload factor of nurses with the application of patient safety goals in the District General Hospital, Indonesia (p-value = 0.952), which means that nurses with a low workload are not related to the implementation of patient safety goals. The average respondent has a neutral opinion on the number of patients treated according to the number of nurses on duty. Nurses also agree that they are not burdened with the work they do. The results of this study are by research conducted at the Hasanuddin Regional General Hospital, where researchers found no relationship between workload and nurse performance in implementing patient safety in each work shift of nurses in inpatient rooms with p-value = 0.078 for the morning work shift, p-value = 0.378 for day or afternoon work shifts, and p-value = 0.162 for night work shifts [20]. The results of this study are the results of research by Albawi et al. in 2020, in whose research they found results that high workload, rushed work, inadequate number of staff, and long working hours are complex problems and directly affect patient safety due to the limited ability of staff to provide comprehensive care, in terms of patient supervision and also in decision making. A high workload can cause fatigue for nurses as well as physical and cognitive impairments, which in turn can increase the risk of errors in patient safety [13].

The results of this study also show that the nurse's communication factor is related to the implementation of patient safety goals in the District General Hospital, Indonesia (p-value = 0.001). Communication is exchanging thoughts, messages, or information through speech, gestures, writing, or communication behavior [18]. The Joint Commission International states that if effective communication is implemented following timely, accurate, clear, complete, and understandable procedures to the message recipient, errors can be minimized, and patient safety improved. In addition, effective communication plays an important role in communication between management, Care Provider Professionals (CPP), and other healthcare professionals with patients and families [15]. The root of the problem that results in errors and communication failures between health care providers is caused by three factors, namely, teamwork failure, untrained and non-standardized communication skills, and problems during handoff activities. Communication that is not standardized and trained often results in miscommunication and loss of important information related to patients and can result in delays in treatment, minor medical accidents, medication negligence, length of stay, additional treatment costs, and others. For this reason, structured and standardized communication techniques such as Situation, Background, Assessment, and Recommendation (SBAR) must be applied and developed in handoff activities, both handover between nurses and handover when transferring patients [14].

Teamwork is defined as a group of people who have specific skills and work together and interact with each other to achieve common expectations and goals [1]. This study's results indicate a relationship between the teamwork factor and the implementation of patient safety goals at the District General Hospital, Indonesia (p-value = 0.019). Research at the West Sumatra Regional Hospital found that the teamwork factor had a 30.89 chance of influencing the implementation of patient safety. Creating the effectiveness of Teamwork requires several factors, such as; member commitment to achieving common goals, setting specific team goals, managing conflict management according to the level of problems, and minimizing social relations [12]. Another study

found that leadership style, Teamwork, and knowledge partially and simultaneously affected patient safety. Teamwork became the most influential variable in his research. The dimensions of Teamwork tested consisted of commitment to achieving common goals, team decision-making, and conflict management, with the highest score found on the dimension of team members, showing their hopes to participate in achieving common goals [1]. In the world of health, teamwork is highly dependent on differences in cooperation between professions (collaboration) in working arrangements in the health service setting [1]. Thus a shared understanding is needed that the root causes of errors and failures of health care providers are often caused by three factors, namely, teamwork failure, untrained and non-standardized communication skills, and problems during handoff activities. Damage to teamwork is usually caused by vertical hierarchical and interpersonal conflicts, which can reduce communication functions and work concentration. For this reason, teamwork is needed by being respectful, caring, and prioritizing the needs of patients [14].

The last factor examined in this study is supervision. The results showed that there was a relationship between the supervision factor. The implementation of patient safety goals (p-value = 0.000) and the supervision factor were the most related to the implementation of patient safety goals with odds ratio = 9.175 (95% CI: 3.550-23.713), meaning that the implementation of supervision Effective nurses have nine times the opportunity to properly implement patient safety goals compared to ineffective supervision at District General Hospitals in Indonesia. Supervision is a form of interaction and professional communication between a nursing supervisor and nurses. Interaction in communication is realized by providing support, assistance, and guidance as a form of a sense of responsibility and implementing supervision so that supervised nurses are expected to provide safe and protected patient care [21]. Supervision is a process to spur work team members to contribute actively and positively to achieving the organization's goals [18].

Several research results found a significant influence between supervision factors and the behavior of implementing patient safety target programs [2]. The literature review also found a relationship between clinical supervision and improving patient safety. If the patient safety culture is implemented correctly, the quality of hospital services will increase and become more qualified [19]. In addition, the results of this study are also by other studies showing a significant relationship between nursing supervision and implementing a patient safety culture. Supervision activities as a form of motivation and support for implementing nurses and can affect the performance of nurses in providing health services to patients [22]. Implement supervision in the restorative component by providing support and motivation to help implement nurses interact and respond to material brought by supervisors, as well as increase experience and development and nurse self-awareness [22].

V. Conclusion

Based on the study's results, it can be concluded that there is a relationship between knowledge, attitude, communication, teamwork, and supervision, and there is no relationship between workload with the implementation of patient safety goals. Supervision is the factor most related to implementing patient safety goals in Regional General Hospitals in Indonesia.

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