

## Implementation of Patient Safety in Accredited Hospitals and Its Determining Factors in Jambi City, Indonesia

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### Abstract

**Background:** Patient safety is an essential part of nursing services and becomes an indicator of the quality of hospital services. **Purpose:** The general aim of this research was to explore and analyze patient safety and related factors in its application in accredited hospitals. **Method:** This research was quantitative research. This research used descriptive analytic with cross-sectional approach. Samples were 226 nurses chosen by using proportional random sampling in two accredited hospitals. The sampling used simple random sampling technique. The application of patient safety by the nurses was surveyed by using an instrument that was developed from the regulation of the Minister of health. Meanwhile, the determining factors of the application of patient safety were measured by using Safety Attitudes Questionnaire (SAQ) which consisted of 6 factors; teamwork, safety climate, job satisfaction, perceptions of management, stress recognition, and working condition. Data were analyzed by using chi-square test. **Result:** The results confirmed that the implementation of patient safety by nurses in the accredited hospitals, more than half were less than good (59%). The result of determining factors analysis was: there was a significant relationship between teamwork, safety culture, stress, management, and working condition and the implementation of patient safety ( $P = 0,000-0,017$ ), while job satisfaction ( $P = 0,928$ ) was an irrelevant factor with the application of patient safety. **Conclusion:** There was a significant relationship between teamwork, safety culture, stress recognition, perception management, and working condition and the implementation of patient safety. This research recommends the necessity to improve policies concerning the evaluation effort of the application of patient safety in the hospitals. Likewise, to evaluate all nursing Standard Operating Procedures (SOP) in terms of patient safety considerations as well as factors that affect them, especially the working condition.

**Keywords:** Patients Safety, Safety Attitude Questionnaire (SAQ), Working Condition

### INTRODUCTION

*Patient safety becomes a vital and important part of responsibilities as well as measures to improve the quality of service* (Findriyartini, 2015; Cahyono S.B, 2008). Assessment of hospital quality is acquired through an accreditation system, one of the goals is the patient safety because it has become a priority for health services around the world (Joint Commission International, 2015; Cosway, Stevens, & Panesar, 2012). The implementation of patient

safety in the hospital is one of the actions to improve the quality of service.

The implementing strategy of patient safety has been done with numerous efforts in hospitals. The Hospital Accreditation Commission (Komisi Akreditasi Rumah Sakit) (2012) explains that the implementation of patient safety must meet criteria such as the accuracy of patient identification, an improvement in effective communication, a safety advancement of high-alert medications, a certainty of accurate-location, accurate-

procedure, appropriate-surgery patient, the reduction of infection risk related to health services, and the reduction of patients fall risk. Meanwhile *Join Commission International* (2015) and WHO have also issued "Nine Life-Saving Patient Safety Solutions". However, patient safety problems persist despite a hospital has been accredited and is still prevalent throughout the world.

Several studies have taken measurements of patient safety regarding reported patient safety at some hospitals in the world that have been accredited by JCI. Pham's (2016) research which conducted in 11 hospitals from 5 countries found 52 incidents of patient safety that is Hongkong 31%, Australia 25%, India 23%, America 12% and Canada 10%. While in Brazil the incidence of adverse events in hospitals is estimated at 7.6% (Costa, 2017). From some of the research results obtained patient safety incidents are still widely found.

Patient Safety Incident Report has not been much done by hospitals in Indonesia. Data which owned by the Hospital Patient Safety Committee (KKP-RS) from September 2006-2012 based on the incident type; 249 reports of Adverse Events (KTD) and 283 reports of Near Miss (KNC). Based on the cause unit; 207 reports in the nursing unit including Adverse Events and Near Miss, 80 reports of pharmacies, 41 reports of laboratories, 33 reports of doctors and infrastructure facilities of 25 reports.

There are some related studies to the implementation of patient safety in hospitals that have been accredited based on 2012 version in Indonesia. The research of Nurmalia and Nivalinda (2016) at government hospitals in Semarang found nearly 56,2% of patient safety implementation is still not good enough, while Harus & Sutriningsih (2015) reported that there were 22 incidents of patient safety practice in the private hospital of Panti Waluya Sawahan Malang. Patient safety incident data are still widely

found in both public and private hospitals although it has passed the accreditation, so it can cause negative effects toward health services.

The impact that happens due to the hospital that does not apply patient safety is a decline in the hospital service quality. The research of Swift (2017) at US hospitals found that patients with adverse events resulted in a loss about \$ 500,000 or insured \$ 1 million per error. The research by Gerven et al (2016) stated that about 15% of health professionals were considering to leave their profession due to mistakes. These are more likely to be experienced by nurses.

The behavior of nurses in implementing patient safety is influenced by various factors that contribute to patient safety incidents. According to Safety Attitudes Questionnaire (SAQ), there are 6-factor domains that are considered; Teamwork Climate, Safety Culture, Perceptions of Management, Job Satisfaction, Working Conditions, and Stress Recognition. It is also revealed by Anderson & Kodate (2015) which states the factors that influence patient safety involving organizational factors, safety culture, and leadership/manager style. World Health Organization (2018) reveals various factors that affect the implementation of patient safety including; external factors of the hospital, organizational and management factors, working condition, teamwork, employees, workload, patients, and communication.

Teamwork factor is the reason for the occurrence of risk or error. Research by Tetuan at. al, (2017) obtained the result that 57.95% of patient safety is affected by teamwork compared to other factors. While the job satisfaction factor also able to improve patient safety because it has a close correlation with performance in nursing services (Platis, Reklitis, & Zimeras, 2015). Research in Indonesia, there is 45.3% low satisfaction of nurses work in Hajj hospital Jakarta.

Management factors play a role as

contributing factors. According to KKP-RS, (2015) that creating leadership and management with an open and fair culture is the first step in implementing hospital patient safety. While safety culture factors are seen from a multicenter study by using Survey Attitude Questionnaire (SAQ) which find that the length of stay increase by 15% for every 10% decline in the safety culture values (Tetuan et al., 2017). While the working condition is urgently needed for the organization can have a high commitment in applying quality through patient safety (Haerkens, 2016). Another circumstance is the stress factor that gives an indication of how much the effectiveness in the implementation of patient safety. These factors are essential to be observed and run by both government and private hospitals.

## OBJECTIVE

The purpose of this research was to analyze the implementation of patient safety by nurses who worked in accredited hospitals and identified the determinant factors based on Safety Attitude Questionnaire (SAQ) including; teamwork, safety culture, job satisfaction, stress recognition, perceptions of management and working conditions.

## METHOD

### *Research design*

This study was quantitative research by using descriptive analytics with cross-sectional approach.

### *Setting*

This research was conducted at two accredited hospitals in Jambi City, Indonesia. They were a government and private hospital that had been certified to pass the accreditation of 2012 version by the Hospital Accreditation Committee or even Joint Commission International. Both hospitals had received the graduation certificates, especially in the element of

patient safety goal. The research was conducted for six months during 2017.

### *Research subject*

The population in this study was 446 nurses. The calculation result for the number of samples in this research was 226 nurses. Inclusion criteria for the samples were; having minimum 6 months of working period and assigned in the inpatient room. The measurement of samples size used proportional random sampling to select 226 nurses among the two accredited hospitals. After getting the samples size of each hospital, then the selection of final samples in each hospital used the simple random sampling technique.

### *Instrument*

The application of patient safety by nurses was measured by using an instrument which was developed from the Regulation of the Health Minister (2011) as it was applicable and suitable with the condition of the hospital where the research was conducted. This was a standard that must be applied to be implemented in every hospital. While the scale of measuring instruments used was 4-point Likert scale (1 = never, 2 = seldom, 3 = often, and 4 = always). The second instrument measured the determinant factor of patient safety implementation by using Safety Attitudes Questionnaire (SAQ). SAQ Instrument consisted of 6 factors; teamwork, safety climate, job satisfaction, the perception of management, stress recognition, and working condition. Each factor was measured by using a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = doubtful, 4 = agree and 5 = strongly agree) which was converted to a 0-100 scale. Each factor score was equal to the average score of its component survey items. A positive score was defined as  $\geq 75$  out of 100.

*Ethical consideration*

This research was already approved by the Ethics Commission of Faculty of Medicine of Andalas University (No. 347/KEP/FK/2017). Principles of ethics based on ethical health guidelines which issued by the National Ethical Committee Indonesian Ministry of Health. Then the researcher did the Informed Consent toward participants to be research subjects after getting a complete and open explanation from the researcher about the overall implementation of the research.

*Data analysis*

The obtained data from the research results were processed and analyzed by using computerized statistic analysis. Data analysis included univariate and bivariate analysis. Univariate analysis was conducted to identify the frequency distribution of patient safety implementation in accredited hospitals. Bivariate analysis was used to analyze the relationship between dependent and independent variables, so to test the relationship between the two variables, Chi-square test with value  $\alpha$  0.05 was used.

**RESULTS***Characteristics of Respondents*

Based on the results of the research (table 1), out of 226 nursing associates in the accredited hospitals in Jambi, mostly were adults (75.6%), most of them were female (77.9%), the majority qualified in associate's degree of nursing (82.3%) and more than half had working period of  $\geq 5$  years for (56.6%) nurses.

*Implementation of Patient Safety in Accredited Hospitals and Determining Factors*

From the result of the research obtained that from 226 nurses of accredited hospitals in Jambi City (table 2), more than half (59%) were poor in implementing patient safety which related to six targets including; accuracy of patient identification, effective communication, improvement of drug safety, fixing the accurate location, surgical and patient procedures, reducing the risk of infection, and reduction of patients fall risk.

Table 3 shows that majority of respondents affirm that the teamwork is good (73%), almost half of the safety cultures are poor (44.7%), most (68.1%) are satisfied with their work, nearly half (47.8%) have high stress, most managements are good (59,7%), most of the working condition is not good enough (55,8%)

**Table 1. Characteristics of research population**

Demograhpy	Number	%
Age (Years)		
$\leq 25$	46	20.4
26 – 45	171	75.6
$>45$	9	4.0
Sex		
Male	50	22.1
Female	176	77.9
Education		
Diploma of vocational education	186	82.3
Bachelor degree	40	17.7
Work Experience		
$< 5$ tahun	98	43,4
$\geq 5$ tahun	128	56,6

**Tabel. 2 Frequency Distribution of Patient Safety Implementation**

Patient Safety Implementation	Frequency	Percentage (%)
Good	93	41%
Poor	133	59%
Total	226	100

**Tabel. 3 Frequency Distribution of Patient Safety Implementation**

Determining Factor	Frequency	Percentage (%)
Teamwork		
Good	165	73,0
Poor	61	27,0
Safety Culture		
Good	125	55,3
Poor	101	44,7
Job Satisfaction		
Good	154	68,1
Poor	72	31,9
Stress Recognition		
Low	118	52,2
High	108	47,8
Perceptions of Management		
Good	135	59,7
Poor	91	40,3
Working condition		
Good	100	44,2
Poor	126	55,8

*The Relationship between Determining Factors and The Implementation of Patient Safety by Nurses in Accredited Hospital*

The related factors to the patient safety implementation in accredited hospitals in Jambi City included teamwork, safety culture, job satisfaction, stress, management, and working condition (table 4). Based on table 4, out of 6 determining factors of patient safety implementation,

there are 5 factors that have relationship with the safety patient implementation in accredited hospitals, they are teamwork (p-value = 0,017), safety culture (p-value = 0,001), stress factor (p-value = 0,003), management (p-value = 0,000) and working condition factor (p-value = 0,000). While job satisfaction factor is not related to the implementation of patient safety (p-value = 0.928).

**Table 4 Relationship of Determining Factors with the Implementation of Patient Safety in the Accredited Hospitals in Jambi**

Determining Factors	Dependent Variables	p-value	OR (CI 95%)
Team work	Patient safety	0,017*	2,163 (1,2-3,9)
Safety climate	Patient safety	0,001*	2,739 (1,6-4,8)
Job satisfaction	Patient safety	0,928**	1,443 (0,8-2,6)
Stress recognition	Patient safety	0,003*	2,419 (1,4-4,2)
Perception of management	Patient safety	0,000*	1,948 (1,1-3,4)
Working condition	Patient safety	0,000*	2,855 (1,6-5,1)

\* p<0,05 (there is relationship); \*\* p>0,05 (no relationship)

## DISCUSSION

The results showed that there were significant relationships between teamwork, safety climate, stress recognition, the perception of management, working condition and the patient safety implementation by nurses in the accredited hospitals with p-value <0,05. The implementation of patient safety goals is an essential aspect that must be met in the accreditation standard. Accredited hospitals mean that they have accomplished the entire elements in patient safety so that all nurses are expected to have good patient safety implementation. This is indicated by the nonexistence of patient safety incidents, either adverse events (KTD), near miss (KNC) or reportable circumstance (KPC). However, this research found nearly 59% of respondents (133 nurses) performed an inadequate implementation of patient safety. This happens because many nurses who do not follow the standard operating procedures that relate to patient safety, and also the passable managerial evaluation system.

According Costa (2017), patient safety is an action to decrease the risk of unintended damage related to health care, so the incidence rate due to medical treatment errors can be reduced. While Ozsayin & Ozbayir (2016) determines patient safety as the prevention of harm that could happen to the patients. The implementation of accredited hospital patient safety in Jambi City is measured based on the Regulation of the Health Minister (Permenkes) reference concerning patient safety in the hospital. Six targets regarding patient safety implementation that the nurses need to do are the accuracy of patient identification, an improvement in effective communication, a safety advancement of high-alert medications, a certainty of accurate-location, accurate-procedure, appropriate-surgery patient, the reduction of infection risk related to health services, and the reduction of patients fall risk. Factors that contribute in this matter

according to Safety Attitudes Questionnaire (SAQ) are teamwork climate, safety culture, perceptions of management, job satisfaction, working conditions, and stress recognition.

The results showed that teamwork in the accredited hospitals in Jambi City, according to a small number of nurses (27%) was poor, and the analysis result confirmed that poor teamwork (72.1%) had a negative impact to nurses in implementing patient safety. Eiras, et al (2014) says that a good team is a team that mutually support and respect each other in performing the task. Andrew F. Coburn (2011) says that the experts of patient safety agree that teamwork skills are very important in countering and reducing errors, and teamwork is also essential to achieve advancement in patient safety implementation. Teamwork that has been built in the inpatient ward of the accredited hospitals in Jambi City, basically, can promote the achievement of the expected goal because the elements in the patient safety objective have been accomplished after obtaining accreditation status. According to Apriningsih, Desmawati, & Muhammad (2013), teamwork between units will facilitate a patient safety implementation program, the accomplishing, and the follow-up of the activity. Ferguson & Cioffi (2017) suggest that teamwork-based approach concerning the nursing care will enable nurses with various experiences and skills to implement safer health care.

Based on the results of the research, it was found that safety culture in the accredited hospitals in Jambi City, less than half of the nurses declared that it was poor (44.7%), and the implementation of poor patient safety that was conducted by nurses was higher on who stated that the safety culture was poor (71.3%) compared to good safety culture (49.6%). Promoting the safety culture is a pivotal step in improving patient safety (Weaver et al., 2013). Ozsayin & Ozbayir (2016) explains that the evaluation regarding the occurred

errors can become a moment to share knowledge that able to enhance the learning process-related patient safety. Meanwhile, according to Nurmalia & Nivalinda (2016), a strong safety culture requires a leadership that is proficient in establishing and communicating the vision of salvation clearly, respecting, and empowering staff to achieve the vision of patient safety. Safety culture within an organization is inseparable from the hospital active role in performing actions that support the ongoing process of establishing safety values in health services.

This research found that job stress contributed to the implementation of patient safety. Less than half (47.8%) of nurses in the accredited hospitals in Jambi City confessed to having high stress. The analysis result showed that high job stress had an effect on the poor implementation of patient safety (69,4%), and low job stress had 2.3 times more chance to enhance patient safety implementation compared to the high-stress nurses. The nurses' stress is the second problem right after the health problems which are felt by the nurses that can lower the work productivity. The perceived job stress can be the pressure in doing the tasks, caused by the stressor that appears from the working condition which is the interaction that arises between psychological demands with control and social support at the workplace (Milutinovic & Brkic, 2012; Revalicha, 2013). Stress is a condition that caused by the individuals' way of thinking that the environmental conditions threaten their abilities expanding. Stress is different on each individual depending on their reaction to the changing situations. Stress on the job is also caused by the stressful situation either internal or external that lasts for a long time, and that individual acknowledges it as a threat or risk that will happen to him (Moustaka, 2010).

Nurses' job stress cannot be ignored because it is strictly related to the safety of nurses and patients. Job stress has various impacts either in the form of physiological, psychological or behavioral symptoms. Farquharson et al. (2013) state that high level of stress and workload causing the non-optimal of nursing care, increasing the number of violations related to patient safety, and the occurrence of the cognitive failure.

Management involvement in quality is a major factor that affects the quality and performance of patient safety (Parand, Dopson, Renz, & Vincent, 2014). Similar research Lippi, Mattiuzzi, Bovo, & Favaloro (2017) state that management governance affects the implementation of patient safety. Thus, management actively supports the formed of the implementation of patient safety. The results of research in the accredited hospitals in Jambi City found that hospital management had significant influence in improving nurses' performance. Good perception of nurses upon the management can be built from the results of positive interactions that happen between employees and the management of both top-level manager (Nursing sector) and middle-level manager (head of the room). In addition, a good perception can also be formed from the suitability between the demands of the management and the expectation of the nurses.

Based on the research result, it was found that working condition in the accredited hospitals in Jambi city (55,8%) was poor. This result indicates that more than half of nurses state that the working condition in the accredited hospitals has not been entirely good even though the accreditation status has been achieved. Poorly implemented patient safety in the accredited hospitals, the presentation was higher among nurses who state that working environment is poor (76.2%) compare to nurses who stated that working environment is good (38%).

This research is also in line with Eldeeb, Ghoneim, & Eldesouky (2016) who affirmed that more than half of the nurses (57.9%) had low patient safety rates that were affected by poor working conditions. However, there are other negative factors such as the increased workload, inadequate quantity of nurses, communication problems in teams, insufficient equipment and lack of managerial support that will lead to a poor working environment.

## CONCLUSION

There were significant relationships between teamwork, safety culture, stress recognition, management perception, and working condition and the patient safety implementation. Managers, especially the top managers of hospitals, are expected to be involved in the patient safety program by developing policies to evaluate the implementation of hospital patient safety, as well as the evaluation of all nursing procedures (SOP) in the consideration of patient safety. This research recommends having a socialization activity concerning patient safety in each service unit by attaching sticker or safety poster. To allocate a special day in each week to do socialization in each unit for several minutes according to the factors that affect patient safety.

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