Indonesian Journal of Global Health Research
Volume 6 Number 2, April 2024
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

FACTORS RELATED TO PATIENT SAFETY CULTURE IN THE OPERATING ROOM

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ABSTRACT
Patient safety culture remains a major concern globally, particularly in anesthesia and surgical services. Considering that surgical and anesthesia services involve various types of invasive procedures that can cause death or complications. This study aims to determine factors related to patient safety culture in the operating room. This quantitative correlation research involved 56 nurses and nurse anesthetists at Hospital A and Hospital B. The sampling technique used was cluster sampling-total sampling. Each respondent has filled out a structured questionnaire via Google Form and has been analyzed using descriptive statistics, chi-square test. To ensure the validity and reliability of the questionnaire, content validity was assessed by experts in the field to confirm that the questions covered all relevant aspects of patient safety culture in the operating room. Reliability was evaluated using Cronbach's alpha, which demonstrated a high level of internal consistency. These measures ensured that the questionnaire accurately and reliably captured the factors related to patient safety culture among the participating nurses and nurse anesthetists. This research found that patient safety culture in the operating room was in the poor category as many as 30 nurses and nurse anesthetists (54%). Training and knowledge about patient safety factors were associated with patient safety culture in the operating room (p= 0.045 and p<0.001). Support from hospital management is very necessary to be able to accommodate all staff in the operating room in implementing an optimal patient safety culture through outreach and training.

Keywords: nurse anesthetist; nurse; patient safety culture

First Received	Revised	Accepted
28 Maret 2024	08 April 2024	20 April 2024
Final Proof Received		**Published**
25 April 2024		30 April 2024

How to cite (in APA style)
Devi, N. L. P. L., Setiabudi, I. K., Wahyuningsih, L. G. N. S., & Putri, I. G. A. N. A. (2024). Factors Related to Patient Safety Culture in the Operating Room. *Indonesian Journal of Global Health Research*, *6*(2), 1081-1088. https://doi.org/10.37287/ijghr.v6i2.3988.

INTRODUCTION

Patient safety culture is the attitudes, perceptions and values held by staff in an organization related to patient safety.(Mohammed et al., 2021). It is very important for all staff in the hospital environment to implement a patient safety culture, including the Anesthesia and Surgical Service (PAB). A patient safety culture must be implemented in providing surgical and anesthesia services to ensure that patients are safe and protected from danger(Patricia et al., 2022). Considering that surgical and anesthesia services involve various types of invasive procedures that can cause death or complications(Nurhayati, 2022) Patient safety culture is a major concern globally. Results of studies conducted by(Nurumal et al., 2020)found that the majority of nurses had a positive total patient safety culture score of 76 (63%). The results of another study conducted by(Kumbi et al., 2020)in Ethiopia found that the overall patient safety culture was 44% (95% CI: 43.3-44.6) with the highest mean percentage of positive responses being “teamwork within the unit”, while the two lowest mean percentages of

positive responses were "management support for patient safety" (30.5%) and "non-punitive response to errors" (31.2%). Based on 12 dimensions of patient safety culture, it was found that the service managers had the highest with an average score of 3. 7, while nurses and doctors with an average score of 3.2(Danielsson et al., 2019).

The patient safety culture implemented in Indonesia is not yet optimal. The results of studies conducted by found different results. This research found that the majority of nurses (91%) had a patient safety culture in the good category(Nurlindawati & Jannah, 2018). Most dimensions of safety culture have even been perceived positively by more than 80% of respondents, the lowest being the response dimensions of not blaming mistakes (47.5%), staff management (57.6%) and frequency of reporting incidents/incidents (58, 5%)(Muhtar et al., 2020). The results of another study conducted by(Yarnita & Maswarni, 2019)At Arifin Achmad Riau Hospital, we actually found different results. This research found that the majority of nurses (56.3%) had a patient safety culture in the negative category. The results of this study are in line with research conducted by(Subarma et al., 2021)at Dr. Hospital. Pirngadi, Medan City, found that the implementation of patient safety culture in inpatient installations was already underway, but not yet optimal.

It is important for staff who work at PAB to have a patient safety culture, such as doctors, nurses and nurse anesthetists. Considering that Patient Safety Incidents (PSI) are still often found in anesthesia services, such as not testing anesthesia equipment in the pre-induction period (29.78%), not carrying out adequate ventilation evaluations during the induction period (46.81%), and not providing assistance. tracheal aspiration during the process of stopping anesthesia (21.98%)(Lemos & Poveda, 2020). Many factors influence patient safety culture at PAB. Results of studies conducted by(Wulandari et al., 2019)found that there was a relationship between nurse motivation and the role of the head nurse with patient safety culture with a p value of 0.003 for each variable. The results of other research conducted by(Agustina et al., 2022)found there was a relationship between age, work experience, job satisfaction, gender, training and patient safety culture. Work fatigue factors may also influence patient safety culture. The higher the workload and the longer the working hours tend to reduce concentration when giving PAB to patients, which can cause danger. Bearing in mind that no literature has been found that discusses in detail the determinants of patient safety culture in the operating room as one of the scope of PAB and no literature has been found that involves multidisciplinarity as an object of research on patient safety culture. So this research really needs to be carried out to find out in more detail the factors related to patient safety culture in the operating room. This study aims to identify factors related to patient safety culture in the operating room. To ensure the validity and reliability of the questionnaire, content validity was assessed by experts in the field to confirm that the questions covered all relevant aspects of patient safety culture in the operating room. Reliability was evaluated using Cronbach's alpha, which demonstrated a high level of internal consistency. These measures ensured that the questionnaire accurately and reliably captured the factors related to patient safety culture among the participating nurses and nurse anesthetists. It is hoped that the results of this research will be a reference in developing programs to improve patient safety culture in anesthesia and surgical services by hospital management.

METHOD

This quantitative correlational research will use a cross-sectional design and will be carried out in Bali Province in August – November 2023. The population of this study is all nurses and nurse anesthetists who work in the operating room at Hospital A and Hospital B,

consisting of 56 people. and 12 nurse anesthetists. The sample size involved in this research was 56 people. Eligibility criteria require that nurses and nurse anesthetists work in surgical inpatient rooms or operating rooms, have a Registration Certificate (STR) as a nurse or nurse anesthetist who is still active and willing to be a research respondent. Nurses or nurse anesthetists who had work experience < 1 year were excluded. Sampling using cluster sampling was carried out to determine the selected hospitals, then continued with total sampling to determine the respondents involved. done.

This research will use the methodself-completed questionnaire, in which respondents fill out their own questionnaires given by researchers.This research will use a demographic questionnaire, knowledge questionnaire, job satisfaction questionnaire, work fatigue questionnaire, and patient safety culture questionnaire. The demographic data questionnaire contains name (initials), gender, age, work unit, agency, profession, education, length of service, and participation in patient safety training. The knowledge questionnaire in this research was created by the researcher himself, consisting of 6 knowledge components, namely knowing, understanding, application, analysis, synthesis and evaluation of 10 statements. The job satisfaction questionnaire consists of 10 components (salary, promotion, supervision, additional benefits, rewards, procedures and regulations, colleagues, type of work, and communication) using a Likert scale (very satisfied, satisfied, quite satisfied, dissatisfied, and very dissatisfied) with a Cronbach Alpha value > 0.7(Devi et al., 2022). The work fatigue questionnaire is based on a questionnaire developed by the Industrial Fatigue Research Committee (IFRC) consisting of 30 statement items with a Cronbach Alpha value of 0.921(Ramdan, 2019). Then the patient safety culture questionnaire uses the Indonesian version of the Hospital Survey on Patient Safety Culture (HSOPSC) developed by the Agency for Healthcare Research and Quality (AHRQ) with a Cronbach's Alpha value ≥ 0.70 with a range of 0.809-0.918 on all items from the 12 components patient safety culture (teamwork within the unit, supervisor/manager expectations and actions promoting patient safety, organizational learning-continuous improvement, management support for patient safety, overall perception of patent safety, feedback and communication about errors, openness of communication, frequency of incidents reporting, worldwide teamwork, staffing, handover and transition, and nonpunitive responses to errors)(Tambajong et al., 2022).

Statistical Product and Service Solution (SPSS) version 20 application, used for data entry and analysis. The data analysis techniques that will be used in this research are univariate analysis, bivariate analysis and multivariate analysis. The univariate analysis that will be used is frequency distribution with percentage or proportion measurements. The bivariate analysis that will be used is the chi-suare test, if it does not meet the requirements, the Fisher's Exact Test will be used. This research has been approved by the ITEKES Bali Research Ethics Commission (Number: 04.0333/KEPITEKES-BALI/VI/2023).

RESULTS

General characteristics of nurses and nurse anesthetists

Table 1.
General characteristics of nurses and nurse anesthetists (n=56)

Characteristics General	f	%
Gender		
Man	47	84
Woman	9	16
Age		
<36 years old	38	70
≥ 36 years old	18	30
Education		
D III/D IV	31	55
S1/S2	25	45
Years of service		
< 13 years	44	79
≥13 years old	12	21
Training		
Once	33	59
Never	23	41

Table 1. Providing details of the general characteristics that the majority of nurses and nurse anesthetists are male, 47 people (84%), aged < 36 years, 38 people (70%), have a D III/D IV education, 31 people (55%), have 44 people (79%) have worked in the < 13 year category, and the majority have attended training on patient safety, 33 people (59%).

Job satisfaction, job fatigue, and knowledge of nurses and nurse anesthetists

Table 2.
Job satisfaction, job fatigue, and knowledge of nurses and nurse anesthetists (n=56)

Factor	f	%
Job satisfaction		
Not satisfied	27	48
Satisfied	29	52
Work fatigue		
Light	47	84
Medium/High	9	16
Knowledge		
Not enough	30	54
Good	26	46

Table 2.Providing details that the majority of nurses and nurse anesthetists have job satisfaction in the satisfied category as many as 29 people (52%), the majority of nurses and nurse anesthetists have work fatigue in the mild category as many as 47 people (84%), and the majority of nurses and nurse anesthetists have knowledge about There were 30 people (54%) in the poor patient safety category.

Patient safety culture among nurses and nurse anesthetists

Table 3.
Patient safety culture among nurses and nurse anesthetists (n=56)

Patient safety culture	F	%
Not enough	30	54
Good	26	46

Table 3.Provides an illustration that the majority of nurses and nurse anesthetists have a

patient safety culture in the poor category, 30 people (54%).

Factors associated with patient safety culture in the operating room

Table 4.
Factors associated with patient safety culture in the operating room (n=56)

Factor	Patient safety culture		*p-value*
	Not enough f (%)	Good f (%)	
Gender			0.719
Man	26 (55)	21 (45)	
Woman	4 (44)	5 (56)	
Age			0.346
< 36 Years	22 (58)	16 (42)	
≥ 36 years old	8 (44)	10 (56)	
Education			0.832
DIII/DIV	17 (55)	14 (45)	
S1/S2	13 (52)	12 (48)	
Years of service			0.780
< 13 Years	24 (55)	20 (45)	
≥ 13 years old	6 (50)	6 (50)	
Training			0.045*
Never	16 (70)	7 (30)	
Once	14 (42)	19 (58)	
Job satisfaction			0.803
Not satisfied	14 (52)	13 (48)	
Satisfied	16 (55)	13 (45)	
Work fatigue			1,000
Light	25 (53)	22 (47)	
Medium/high	5 (56)	4 (44)	
Knowledge			< 0.001*
Not enough	22 (100)	0 (0)	
Good	8 (24)	26 (76)	

Table 4.Providing details that based on the overall statistical test results, it was found that the training and knowledge variables had a p-value <0.05, namely 0.045 and <0.001. So it can be concluded that there is a relationship between training and knowledge and patient safety culture among nurses and nurse anesthetists.

DISCUSSION

The results of this study found that the majority of nurses and nurse anesthetists had a patient safety culture in the less than 30 categories (54%), after analyzing 12 components of patient safety culture, namely teamwork within the unit, expectations and actions of supervisors/managers to promote safety. patients, organizational learning-continuous improvement, management support for patient safety, overall perception of patent safety, feedback and communication about errors, openness of communication, frequency of reported incidents, worldwide teamwork, staffing, handover and transition, and nonpunitive response to mistakes(Tambajong et al., 2022). Results of studies conducted by(Jovanda et al., 2022)also found the same results. This research revealed that the patient safety culture in class 3 inpatient rooms at Arifin Achmad Hospital was 54.5% in the good category and 45.5% had a patient safety culture in the sufficient category. This indicates that the majority of nurses and nurse anesthetists who work in the operating room do not have a collaborative

environment in the behavior of all staff which emphasizes the safety of patients, staff, infrastructure and the environment. Even though every health service facility is obliged to ensure patient safety, health service providers are required to apply various skills and be aware of patient safety. Support from hospital management is very necessary to be able to accommodate all staff in the operating room, especially nurses and nurse anesthetists so that they can improve patient safety culture through regular outreach, training, monitoring and evaluation activities.

This is supported by(Hayati et al., 2022)who found that there was a relationship between the management function of the head of the room and the implementation of patient safety at Hospital "X" Banjarbaru City with p-value=0.024 ($p<0.05$). The results of another study conducted by(Mohammed et al., 2021)also found that almost half (184 (44.8%)) of health workers demonstrated a good patient safety culture. However, the results of this study cannot reveal the extent of the relationship between head ward or hospital management and patient safety culture. However, different study results were found. Results of studies conducted by(Kartikasari et al., 2023)found that in general the culture of patient safety among health workers at RSUD Dr. R. Soejono is included in the strong culture (70.34%). There are many factors that can influence the patient safety culture possessed by nurses and nurse anesthetists, including training and knowledge about patient safety. This research reveals that training has a significant relationship with patient safety culture. This research also revealed that nurses and nurse anesthetists with training on patient safety tend to have a better patient safety culture in the good category compared to nurses and nurse anesthetists who have never received training. This is supported by(Sithi & Widiastuti, 2018)who found that there was an increase in the understanding of nurses at Dr. Suyoto Jakarta regarding the importance of patient safety, even compliance reached 97% after training.

The knowledge factor about patient safety is also associated with patient safety culture. This research reveals that knowledge has a significant relationship with patient safety culture. This research also revealed that nurses and nurse anesthetists with good knowledge about patient safety tend to have a patient safety culture in the good category compared to nurses and nurse anesthetists who have less knowledge. This is supported by(Yoke et al., 2022)who found that out of 59 nurses there were 50 nurses (84.7%) who had good knowledge and 32 nurses (54.2%) who stated that patient safety was high, patient safety was low, so there was a significant relationship between nurses' knowledge and patient safety on the quality of nursing services. in the inpatient room at Bayangkara Hospital, Bengkulu City. The results of another study conducted by(Simas et al., 2022)also revealed that there was a relationship between the knowledge and attitudes of nurses and the implementation of patient safety in the treatment room at the Tangerang City Regional Hospital. Results of studies conducted by(Setyowati, 2019)also found that there was a significant relationship between nurses' knowledge and the implementation of patient safety culture with a p value = 0.007, POR value = 4,580 (95% CI = 1,605-13,067).

Work fatigue factors are not associated with patient safety culture. This research reveals that work fatigue does not have a significant relationship with patient safety culture. In fact, nurses and nurse anesthetists who have mild work fatigue should be able to implement a patient safety culture well, considering that they work without any task-related stress, which means they work wholeheartedly without any significant impact on their professionalism as nurses and nurse anesthetists. However, the results of this research are different from the results of the study conducted by(Albalawi et al., 2020)who found that poor workload was reported as the main factor hindering a positive patient safety culture in Saudi Arabia. Working hours per

week is one of the factors that is significantly related to patient safety culture(Kumbi et al., 2020). The results of this research are supported by(Febriani & Musharyanti, 2023)who found that the level of work fatigue was relatively low as many as 58 people (100.0%), patient safety culture was quite good as many as 41 people (70.7%) and work fatigue had a negative influence on patient safety culture, but did not have a significant relationship (p 0.200 and r -0.171).

CONCLUSION

The majority of nurses and nurse anesthetists have a patient safety culture in the poor category. This indicates that those who work in the operating room do not have a collaborative environment in the behavior of all staff which emphasizes the safety of patients, staff, infrastructure and the environment. Training and knowledge factors about patient safety are associated with this patient safety culture.

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