Research Article

Patient Safety Culture in Nurses in Karawang, Indonesia: A Cross-Sectional Study

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Abstract. Patient safety is crucial for health care quality and is one of the major parameters monitored by all health care organizations around the world. Nurses play a critical role in improving the quality of care and patient safety because they take care of patients for the full 24 hours and engage with families and other health professionals. Thus, this study aimed to identify patient safety culture and its associated factors among nurses in Karawang, Indonesia. This study was conducted using a cross-sectional design. It was estimated that 220 participants would be needed to have confidence in the results at a medium-effect size. A convenience sampling technique was applied to select participants. This study used the Hospital Survey on Patient Safety Culture questionnaire. Linear regression analyses were used to investigate the factors associated with patient safety culture. Most of the nurses (52.79%) had a nursing diploma and 7% had been married. Approximately 70% were nurses at the level 1 to 3 range. The mean score was 3.05 (SD = 1.43). The highest domains score was teamwork (4.03, SD = 1.76), and the lowest score was reporting patients' safety events (2.21, SD = 1.43). Gender, education level, and working unit contributed significantly to the variance in patient safety culture and the R-squared was 28.8%. This study found that patient safety culture among nurses was moderate. Therefore, in order to improve patient safety, a training program for nurses is needed alongside strategies to improve professional communication.

Keywords: patient safety, culture, nurses, Indonesia

1. Introduction

Patient safety is considered to be crucial to health-care quality and is one of the major parameters monitored by all health-care organizations around the world [1]. World Health Organization (WHO) defines patient safety as 'preventing errors and adverse effects for health-related patients' and 'doing no harm to patients (WHO, 2009). The WHO explains most commonly used terms relevant to patient safety such as 'adverse events' and 'near misses'. Nonetheless, in relation to patient safety, only preventable adverse events can be used to indicate the sub-optimal patient care (WHO, 2019).The WHO created the Patient Safety Friendly Hospital Initiative (PSFHI) to establish and promote a culture of patient safety in health care facilities. PSFHI's consist of five domains, namely

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leadership and governance, engagement of patients and the public, healthy evidence-based clinical services, safe environment, and lifelong learning (WHO, 2019).

Previous systematic review reported that prevalence of preventable adverse events estimates from 2% to 94% with inappropriate prescribing as the most common type of adverse events[2]. In addition, About 10 percent of all inpatient admissions in developed countries are projected to result in some sort of unintended harm [3].Recent evidence suggests that 134 million adverse events occur each year due to unsafe care in hospitals in low- and middle-income countries (LMICs), resulting in 2.6 million deaths annually[4].In terms of economic impact; the mean costs per preventable adverse events per study ranged from €2.58 to €111 727[5].

Nevertheless, Patients safety culture is multidimensional concept defined in the health service context, as the product of values, attitudes, perceptions, competences and standards of individual and group behavior that determine the administration's commitment, style and proficiency in managing patient safety(Rollenhagen, 2018;Polo, Cervai, & Kantola, 2018). Culture of safety requires an understanding of the values, attitudes, beliefs and norms that are important to health care organization and what attitudes and behaviors are appropriate and expected for patient [8].While, hospital safety culture assessment is being used as a management tool and encouraged by health policymakers and managers in countries around the world. Organizations with a strong safety culture are characterized by good communication among staff, mutual trust and common perceptions of the importance of safety and the effectiveness of preventive measures (Cláudia et al, 2018).

Some studies have evaluated the culture of patient safety across professions. [9], units [10], hospitals [11], and countries [12,13]. Many researchers in their own countries have measured patient safety culture in intensive care units (ICUs) [10]. For example, previous study found that the workload was high in all units except the intermediate care unit and its associated with the rate of adverse event [14].Other units' patient safety culture was also assessed by many scholars with different measurement tools[15–17].

Nurses play a critical role in improving the quality of care and patients safety because of their intensity to take care patients a whole day "24 hours" and engagement with families and other health professionals (Polo et al., 2018; Vaismoradi, 2018). Evidence suggests that better nursing care could likely prevent some proportion of deaths due to errors [19] and better patients safety culture related to lower rate of complications and adverse events [20].Improper communication and coordination among healthcare professionals, lack of understanding, and insufficient skills have been identified as a primary problems of nursing errors [21–23]. Studies have shown that nurses and nursing

students lack communication skills [24]. Given the important role of the patient safety culture in clinical settings, it is required to strengthening of interventions in nursing practice. As per our knowledge, few study has yet measured patient safety culture in secondary hospitals of Karawang Indonesia. Thus, this study aimed to identify patient safety culture and its associated factors among nurses in Karawang, Indonesia.

2. Methods

2.1. Study design

This study was conducted using a cross-sectional design at general public hospital in Karawang, West Java, Indonesia. Karawang is a West Java regency. The regency lies just outside the Jabodetabek district, on the eastern outskirts of Metropolitan Jakarta and is the site of industrial production (such as factories). There is only one general public hospital in Karawang which has become a reference hospital in this area with differs ethnicity both health care providers and patients.

2.2. Sample

Population of this study was nurse who work in inpatients department of public hospital in Karawang, West java Indonesia. The total nurses work in this hospital are 446. The criteria for inclusion were: 1) Nurses who (a) work in either clinical or managerial positions (this subset [senior nurses] includes rotating shifts in nurses, direct ward/unit supervisors [head nurses], rotating shift nursing supervisors, nurse educators, nurse managers, and nurse executives). 2) Have at least 3 years of nursing diploma. 3) Have at least 6 months of current workplace experience. 4) Have no plans to leave the center within the next 6 months. It has been estimated that 220 participants need to have confidence in the results at a medium-effect size (Cohen, 1992), which is widely used in the social sciences, and a power estimate of 0.8, with an alpha of 0.05. A convenience sampling technique was applied to select studied participants.

2.3. Instruments

The socio-demographic question contains 14 topics, such as gender (male and female), age in years (25, 26-30, 31-35, 36), level of education (diploma, bachelor's degree, master's degree and above), length of work as a nurse in months (13-24, 25-48, 49-71,

72), length of work in the current unit in months (24, 25-48, 49-71, 72), position (staff nurse, nurse in charge, nurse in charge and manager).

The Hospital Survey on Patient Safety Culture (HSPSC) developed by Agency for Healthcare Research and Quality (AHRQ) U.S. Department of Health and Human Service (2016) used operationally to measure perceptions of the safety culture. This instrument consists of 12 composites of safety culture with a total of 42 items rated on a 5-point Likert scale ranging from "5= strongly agree" to "1= strongly disagree" or a 5-point frequency scale wherein 5= always and 1= never before.

2.4. Procedure

After obtaining a permission letter from Lincoln University College to perform the study in Indonesia, the researcher will request permission to perform the study with the Karawang hospital. Upon receiving a letter of approval from each hospital's Ethical Committee the researcher will begin collecting the data. For subject recruitment, the researcher asked the head nurse permission to clarify the purpose of study and eligible criteria for respondents. During the ward meeting, the notified consent form was circulated and collected by the end of the ward meeting. Inform consent consists of some explanations about the protection of participants, including the anonymity, the unnamed signature box to ensure confidentiality and a statement that all information provided is for academic purposes only. The researcher submitted the questionnaire to respondents after they had obtained their consent. Participants also have a right to withdraw if they feel inconvenience from this study. The questionnaire is anonymous and no personal identification data and the completed questionnaires were then returned in sealed envelopes to the researcher.

2.5. Data analysis

This study was employed by the ANOVA/t test to describe the average quotas for different demographic and clinical categories. Linear regression analyses were used to investigate the factors associated with patient safety culture. The statistical analyses were performed using SPSS for Windows (22.0), with 0.05 being considered statistically significant.

TABLE 1: Comparison of patient's safety culture based on demographic characteristics (n=220)

Variables	n (%)	Patients' safety culture		
		Mean	SD	p-value
Age, Mean ± SD	35.76 ± 13.45			
Gender				
Male	75 (34.1)	3.10	1.76	0.010
Female	145 (65.9)	4.21	1.65	
Education level				
Diploma III	116 (52.7)	2.78	1.15	0.001
Bachelor	100 (45.5)	3.04	1.16	
Master or specialist	4 (1.8)	3.76	1.48	
Marital status				
Married	154 (70.0)	3.44	0.47	0.298
Single	66 (30.0)	3.29	0.43	
Working position				
Nurse level 1-3	133 (70.0)	3.76	1.01	0.262
Nurse level 3-5	57 (30.0)	3.93	1.99	
Working unit				
Inpatient department	110 (50.0)	3.65	0.77	0.030
Outpatient department	45 (20.4)	4.66	1.42	
Surgery department	35 (15.9)	3.53	1.38	
Emergency department	30 (13.7)	4.67	1.00	
Working experience (year), Mean ± SD	18.87± 6.34			

3. Results

Most of them (52.79%) had a nursing diploma, and 7% had been married. Approximately 70% were nurses at the level 1 to 3 range. Participants had an average of 18.87 years of nursing experience (SD = 6.34), and 50% had worked in an inpatient department. Gender, education level, and working unit was significantly different in terms of patient's safety culture (Table 1).

Table 2 shows descriptive analysis of patient's safety culture. The mean score was 3.05 (SD=1.43). The highest domains score was team work (4.03, SD=1.76), with the lowest score was reporting patients' safety events (2.21, SD=1.43) (Table 3).

Table 3 shows simple linear regression analysis results of patient's safety culture. Gender, education level, and working unit was associated contributed significantly to the variance in patient safety culture with R square was 28.8% (Table 3).

TABLE 2: Descriptive analysis of patient's safety culture (n=220)

Variables	Mean	SD
Patients' safety culture	3.05	1.43
Domain score		
Teamwork	4.03	1.76
Staffing and Work Pace	3.45	1.56
Organizational Learning – Continuous Improvement	3.56	1.44
Response to Error	3.56	1.93
Supervisor, Manager, or Clinical Leader Support for Patient Safety	3.64	1.57
Communication about Error	2.54	1.10
Communication Openness	2.06	1.22
Reporting Patient Safety Events	2.21	1.43
Hospital Management Support for Patient Safety	2.54	1.51
Handoffs and Information Exchange	3.67	1.02

TABLE 3: Simple linear regression analysis results of patient safety culture (n=220)

Variable	Overall score ß (SE)	p-value
Gender	0.214 (0.064)	0.001
Education level	0.306 (0.091)	0.001
Working unit	0.397 (0.066)	0.001
R^2	0.288	

4. Discussion

This study found that patient safety culture among nurses was reported moderate. Moreover, in China, research findings showed that a clear culture of patient safety is associated with a lower rate of complications for patients and fewer adverse events [25]. In Turkey, the total score average of the nurses on the patient's safety culture was 2.58±0.39, with highest score on the employee behavior subscale, and the lowest score on the adverse event reporting system subscale (Rizalar&Topcu, 2017). A meta-analysis, including 11 descriptive studies on hospital staff, showed that only 8.3 and 32.3% of the respondents of the reviewed articles have rated patient safety culture in Iran as excellent and very good, respectively [26]. Another study conducted in Brazil found that the perception of safety climate differed between the categories for most areas, except for the recognition of stress, and there is correlation between five Safety Attitude Questionnaire (SAQ) domains and the variables time of experience and intention to leave the profession [26]. Study conducted in Egypt reported that more than half (57.9%) perceived low patient safety. The majority of nurses (63.2%) perceived never occurrence of adverse events and 54.8% did not formally report adverse events[27].

Feedback and communication openness refer to staff perceptions of being informed about errors, receiving feedback about changes put into place based on event reports, discussing ways to prevent errors, speaking up freely if they see something that may negatively affect patient care, and feeling free to question those with more authority (AHRQ, 2009). Six studies examined relationships between the domain and patient safety and care quality outcomes (Lee, 2017). Culture of safety requires an understanding of the values, attitudes, beliefs and norms that are important to health care organization and what attitudes and behaviors are appropriate and expected for patient [8].

This study found that nurse who are working at surgical department has the lowest score of patient safety culture. Surgical departments, including operating rooms, anesthesia units, obstetrics and gynecology departments, and other surgical units, are high hazard settings with a high potential for patient harm[28]. Over half of all hospitals, adverse events (34.35 to 83%) occur in surgical settings[29].The safety culture in these departments has been measured in certain studies. For example, the standard safety climate measure and safety climate strength in relation to length of stay of very low birth weight (VLBW) infants in neonatal intensive care units (NICUs)[25]. While, Shu, Cai, Tao, & Cheng (2015)have measured surgical settings compared with other units in county hospitals using Hospital Survey on Patient Safety Culture (HSOPSC).Promoting highly reliable care in operating environments demands a strong culture of patient safety[30]. Consequently, assessment of safety culture in surgical departments is a pressing concern.

5. Conclusion

This study found that patient safety culture among nurses was reported moderate. Gender, education level, and working unit was significantly different in terms of patient's safety culture. Patient safety is an important element in the delivery of quality health care services. Therefore, in order to improve patient safety, a training program for nurses is needed alongside strategies to improve professional communication. An increasing number of studies have assessed the culture of patient safety and thus reveal differences in the culture of patient safety across professions, units, hospitals, and countries.

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