The Relationship Between Work Engagement And The Dimensions Of Nurse Staffing With Patient Safety Culture In The Inpatient Room Of Porsea Hospital

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Abstract

Nurses play a key role in improving patient safety culture due to their continued presence around patients. Nurse performance in implementing a patient safety culture is influenced by the level of nurse work engagement. A low patient safety culture can also occur as a result of inadequate nurse staffing. This study aims to analyze the relationship of work engagement and dimensions of nurse staffing with patient safety culture at the inpatient room of RSU Porsea. The method used in this study is quantitative with a cross sectional approach. Sampling techniques used are a purposive sampling of 64 respondents. The data analysis used is Chi-Square test. The results of this study showed an overview of the level of work engagement in nurses which 21 nurses (32.8%) include in high category and 43 nurses (67.2%) in low category. The staffing dimensions revealed that 31 respondents (48.4%) answered appropriate and 33 respondents (51.6%) answered inappropriate. This study also proved that 48.4% of patient safety culture is in positive category and 51.6% is in negative category. There is a significant relationship between work engagement (p value = 0.001) and nurse staffing dimension (p value = 0.001) with patient safety culture. Hospital management is expected to provide recognition and appreciation to nurses, as well as improve the management of nurse staffing so that work engagement in nurses can be enhaced which make the application of patient safety culture can be more optimal.

Keywords: Work Engagement, Staffing, Patient Safety Culture, Nurses

INTRODUCTION

Patient safety culture has become one of the main components of organizational culture in health care. According to Weaver & Edrees (2018) patient safety culture is an integral part of organizational culture that is specifically related to values and beliefs regarding safety patient. This is confirmed by Bernard et al. (2018) which states that patient safety culture is the values, attitudes, and behaviors that are believed by all staff in health facilities in providing prioritize patient safety, and create a system that learns from mistakes. Patient safety culture can be summed up as a shared perception of the goal of patient safety to prevent medical errors from occurring. WHO in its report stated that the number of Unexpected Events (KTD) in hospitalized patients that occurred in various countries ranged from 3 - 16% (Renoningsih, Kandou and Porotu'o, 2016). Medical errors in the United States occupy the third position as the most common cause of death, while in the UK it is estimated that one patient safety incident is reported every 35 seconds (WHO, 2017. Reports of Patient Safety Incidents in Indonesia show an increase from 1489 cases in 2018 to 7465 cases in 2019 with adverse events reaching 31%, KNC reaching 38%, and KTC reaching 31% (KNKP, 2020). This shows that patient safety is an issue that is still a global concern.

Kusumapradja's research (2017) on the analysis of patient safety culture in several hospitals in Jakarta found that 53.2% of 34 hospitals had a patient safety culture that was still classified as moderate. Research by Yarnita & Maswarni (2019) which was conducted in the ICU Room of Arifin Achmad Riau Hospital showed that 56.3% of 64 nurses had a negative patient safety culture. Another study conducted by Denning et al. (2020) regarding the impact of COVID-19 on patient safety culture stated that there was a decline in patient safety culture and perceptions of management among nurses. These results show that patient safety culture is still prone to decline, especially during the current pandemic. A low patient safety culture can enable or increase errors when providing health care. Errors that are not prevented can lead to prolonged or repeated treatments, as

well as increased costs (Kusumaningsih et al., 2020). Research by Fan et al. (2016) regarding surgical wound infections showed that there was a significant relationship between a low patient safety culture and the incidence of infection in colonic surgical wounds. Another study conducted by Berry et al. (2020) showed a relationship between a low patient safety culture and an increased patient injury rate.

This proves that patient safety culture is closely related to the patient's final condition which if not corrected can endanger patient safety in the hospital. urses play a key role in enhancing patient safety culture due to their ongoing presence around patients (Amiri et al., 2018). Care given by nurses is influenced by the level of performance of nurses. Kim's research (2014) states that the performance of nurses in providing good nursing care is influenced by a high level of work engagement. Quality nursing care has an impact on patient safety. This shows that work engagement is a predictor for nurses in implementing a patient safety culture. Work engagement is a state of mind that is positive and full of work, and is characterized by passion, dedication and absorption of work. Ree & Wiig (2020) stated that the work environment and work engagement are related to patient safety culture. Kutney-Lee et al., (2016) stated that hospitals with high work engagement rates for nurses get good ratings from patients. Research by Pearson et al., (2016) shows that work engagement in nurses is associated with a lower prevalence of decubitus ulcers and increased patient satisfaction rates. Staffing which is one aspect of nursing management has also been considered as an element of patient safety culture. Rahayu (2017) states that in implementing patient safety it is necessary to consider the human factor by estimating workload, working hours, staffing, ratios and shifts, and fatigue levels. This is supported by research by Thomas-Hawkins et al. (2020) concerning patient safety in the hemodialysis unit shows that low staffing rates and a heavy workload are significantly associated with low patient safety. Another research by Shang et al. (2019) regarding healthcare-associated infections (HAIs) showed that low staffing levels were significantly associated with the risk of HAIs after 2 days of treatment. The results of a preliminary study conducted by researchers at Porsea General Hospital, show that the comparison data for the number of nurses to beds is 137:174. Permenkes 340/MENKES/PER/III/2010 states that the ratio of the number of nurses and beds in a type B hospital is 1:1. Then, the nurse turnover rate at this hospital also increased from 6.71% in 2019 to 7.3% in 2020. This turnover rate is related to the work engagement and staffing levels of nurses at the hospital (Edwards, 2019; North et al., 2013). Patient Safety Incident Data (IKP) found at Porsea Hospital has also increased since 2018 by 15 cases, then in 2019 there were 18 cases, and in 2020 there were 22 cases with KNC 14 cases, KTD 5 cases, KTC 2 cases, and KPC 1 case.

RESEARCH METHODS

This study used a descriptive analytic research design with a cross sectional approach. It was carried out in the Inpatient Room of RSU Porsea from March to April 2022. The sample for this study was Inpatient Nurses in 4 rooms with a total of 64 nurses using a purposive sampling technique. The instrument used in this study was a questionnaire which was divided into 4, namely Questionnaire A containing demographic data of respondents, Questionnaire B containing patient safety culture adaptation of the standard questionnaire Hospital Survey on Patient Safety Culture (HSOPS) from AHRQ (2016), Questionnaire C containing work engagement based on theory from Bakker et al., (2014), and Questionnaire D contains dimensions of nurse staffing based on theory from Thériault et al. (2019). Univariate analysis was performed on nurse characteristics (age, gender, education, years of service), work safety culture, work engagement, and nurse staffing dimensions expressed in frequency and proportion. Bivariate analysis was performed to examine the relationship between the characteristics of the respondents and the dependent variable, and the relationship between the independent variables and the dependent variable using the Chi-Square test.

RESULTS AND DISCUSSION

Table 1 explains that 27 nurses (42.2%) are ≤ 30 years old, and 37 nurses (57.8%) are > 30 years old, so it can be concluded that the majority of nurses are > 30 years old.

Table 1 Description of the Characteristics of Nurses in the Inpatient Room of RSU Porsea (n = 64)

Characteristics	Frequency	(%)
Age		
≤ 30 years old	27	42,2
> 30 years old	37	57,8
Total	64	100
Gender		
Woman	61	95,3
Man	3	4,7
Total	64	100
Education		
D3	38	59,4
S1 Ners	26	40,6
Total	64	100
Working time		
≤ 5 years old	29	45,3
> 5 years old	35	54,7
Total	64	100

These results are in line with research conducted by Agustian (2015) which showed the results that the majority of inpatient nurses were over 30 years old with a total of 34 (55.7%). Another study by Yasmi & Thabrany (2018) also showed results that the group of nurses with the most age was 31-40 years (39.13%). Most of the nurses at Porsea Hospital are in the late young adult and middle adult age range. This can be caused by Porsea Hospital which has been established since 1973. Researchers assume that many nurses have worked at Porsea Hospital for a long time until they are getting older. According to Apriluana et al. (2016) at the age of over 30 years, the structure of a person's life tends to be fixed and stable. At this age a person can think more critically which will affect them in their actions when working. The gender variable explained that there were 61 female nurses (95.3%) and 3 male nurses (4.7%) so that the researchers concluded that the majority of nurses were women. These results are in accordance with Hasibuan's research (2020) which shows that in the inpatient room, 147 nurses (72.5%) are dominated by female nurses. Another study conducted by Arini (2018) explained that of the three hospitals studied, all three were dominated by female nurses with a total of 174 nurses (69%). Retnaningsih & Fatmawati (2018) stated that nurses are more in demand by women who are identical with higher accuracy and patience than men, making it suitable for providing nursing care to patients with various characteristics and desires.

According to Apriluana et al. (2016), nurses are popular with women because of their work related to mother instinct problems or those that require a sense of motherhood. In addition, according to researchers, there are many female nurses in the inpatient rooms of RSU Porsea because there are more male nurses placed in the emergency room and emergency room. This is because the room tends to be more crowded and the actions that are performed require speed and more effort. The education variable explained that there were 38 nurses with D3 education (59.4%) and 26 nurses with Bachelor Degree (40.6%) so that the researchers concluded that most of the nurses had D3 education. These results are in line with the State's research (2018) which found that of the 83 nurses studied, 65 nurses (78.3%) of them had D3 degrees in nursing. In addition, research conducted by Hasibuan (2020) also showed that 115 (67.3%) of 171 nurses had D3 education. Ezdha (2018) in his research stated that educational factors will affect a person's ability and behavior at work. According to Retnaningsih & Fatmawati (2018) the higher a person's education, the more rational and open way of thinking will be in dealing with problems. The results of this study, there are more nurses with education level D3 than S1. This can be caused by the large number of vocational nursing graduates. The number of semesters that are fewer and the cost is cheaper than that of S1 means that this program is still in high demand. In addition, the minimum requirement to become a nurse practitioner is that D3 graduates from the D3 level of nursing are more commonly found in hospitals. The variable of working period explains that there are 29 nurses (45.3%) with a working period of ≤ 5 years and a working period of > 5 years totaling 35 nurses (54.7%) so it can be concluded that the majority of nurses have a working period of > 5 years. This is in line with research conducted by Yarnita & Maswarni (2019), it was found that out of 64 nurses, 53 nurses (82.8%) had work experience ≥ 5 years. Another study by Faridah et al. (2019) also found that the number of nurses working for > 5 years was 38 nurses (55.9%) of a total of 68 nurses. The results of this study prove the assumptions of previous researchers who said that many nurses at Porsea Hospital have worked for a long time and have survived at the hospital, so that the majority of inpatient nurses at Porsea Hospital have work experience of more than 5 years. According to Apriluana et al. (2016) experience is a combination of knowledge and behavior that continues to form over time. Huber (2017) states that length of work is synonymous with experience, the longer you work, the more experience and knowledge you will have. So in this study, the longer the nurse's tenure the better the behavior in providing care.

Table 2 Overview of Work Engagement, and Dimensions of Nurse Staffing, and Patient Safety Culture in the Inpatient Room of RSU Porsea (n = 64)

Variabel	Frequency	(%)
Work Engagemet		
Tall	21	32,8
Low	43	67,2
Total	64	100
Dimensi *Staffing*		
Good	31	48,4
Not enough	33	51,6
Total	64	100
Patient safety culture		
Good	31	48,4
Not anough	33	51,6
Total	64	100

Table 2 explains that nurses who have high work engagement are 21 nurses (32.8%) and low work engagement are 43 nurses (67.2%) so it can be concluded that the majority of nurses have low work engagement. . This is in line with research conducted by Rivera et al. (2011), where it was found that of 510 nurses studied, only 31% of nurses who are actively engaged in their workplace. Other research by Alfifi et al. (2019) stated that out of 289 nurses, 25% had a low work engagement rate, and 49% had an everage work engagement rate. Work Engagement according to Schaufeli (2014) is a positive emotion towards work. Ghazawy et al. (2019) stated that the level of work engagement affects performance and turnover plans. The lower a person's work engagement, the lower the performance so that it affects the turnover rate. This is in accordance with nurse turnover data obtained from UKI Hospital, which is an increase from 6.71% in 2019 to 7.3% in 2020. Thus, there is still a need to increase work engagement among nurses at Porsea Hospital. On the staffing dimension variable, nurses explained that as many as 33 nurses (51.6%) answered the less staffing category, and 31 nurses (48.4%) gave good category answers. So it can be said that most nurses have a poor perception of the staffing dimension. This is not in line with research conducted by Situmorang (2015) which showed that most nurse staffing was in the sufficient category, namely 44.9%. Another study from Febriyanty & Utami (2019) found that only 40.29% of nurses gave a positive response to the staffing dimension, so it can be concluded that the negative response to the staffing dimension was greater. Staffing is an important point of human resource management in organizations. Mensik (2017) states that both understaffing can affect nurse performance. According to Thériault et al. (2019), the use of temporary and additional staff is an indicator of staffing instability. In this study, 40 nurses (62.5%) answered that they used more temporary staff than the optimal number. This can be caused by the increased nurse turnover rate so that temporary workers are needed to replace these vacant positions. Thus, the dimensions of nurse staffing in inpatient rooms still need to be optimized. The patient safety culture variable explained that 33 nurses (51.6%) indicated a patient safety culture in the poor category, while almost 31 respondents (48.4%) indicated a good category. So it can be concluded that patient safety culture in nurses is still in the poor category. This result is not in line with research conducted by the State (2018) which obtained data that out of 83 nurses, 43 nurses (51.8%) applied a patient safety culture in the good category, while 40 nurses (48.2%) had a poor category. . Another study by Yarnita & Maswarni (2019) actually showed different results, of the 64 nurses studied, more than half, namely 56.4% of nurses had a poor patient safety culture. Paradiso & Sweeney (2019) state that a culture of justice is a culture of non-blame that only focuses on identifying and addressing safety issues. According to AHRQ (2016) a culture of fairness is related to the reporting of patient safety incidents. The results of this study, more than half of the nurses, namely 33 nurses (51.6%), answered that they were worried that the mistakes they made would be stored in their personal data. This can make nurses afraid to report when they make mistakes, while reporting culture is an important component in patient safety culture. Thus, it is still necessary to improve patient safety culture for nurses in inpatient rooms.

Table 3 Relationship between Nurse Characteristics and Patient Safety Culture in the Inpatient Room of RSU Porsea (n = 64)

Variable	Patient Safety Culture				*p value*	OR 95% CI
	Good		Not enough			
	n	**%**	**n**	**%**		
Age						
≤30 years old	9	33,3	18	66,7	0,070	0,341
>30 years old	22	59,5	15	40,5		(0,121-0,960)

Gender						
Woman	30	49,2	31	50,8	1,000	1,935
Man	1	33,3	2	66,7		(0,167-22,484)
Education						
D3	14	36,8	24	63,2	0,047	0,309
S1 Ners	17	65,4	9	34,6		(0,109-0,876)
Working time						
≤ 5 years	7	24,1	22	75,9	0,001	0,146
> 5 years	24	68,6	11	31,4		(0,048-0,443)

Based on the data in table 3, 18 nurses (66.7%) had a poor patient safety culture and 9 nurses (33.3%) had a poor patient safety culture. Then in the age group > 30 years, 22 nurses (59.5%) had a good perception of patient safety culture, and 15 nurses (40.5%) were in the poor category. The results of the statistical test obtained a p value = 0.070 (p value > 0.05), so it can be said that there is no significant relationship between age and patient safety culture in the Inpatient Room of UKI Hospital. So based on this, H0 is accepted and Ha is rejected. In addition, it was found that the OR = 0.341 and (95% CI = 0.121-0.960). This value indicates that the OR < 1, which means that the age group > 30 years has a 0.341 times greater chance of having a good patient safety culture compared to the age group ≤ 30 years. The results of this study are not in line with Rahayu et al., (2018) who found a relationship between age and patient safety culture with a p value of 0.001 <0.05. However, these results are in line with research conducted by Cahyono (2015) which stated that there was no significant relationship (p value 0.578 > 0.05) between age and patient safety culture. This is not related because age is not a factor that influences patient safety culture. Influencing factors consist of 12 dimensions listed in the Agency for Health care Research and Quality (AHRQ). The gender variable shows that 31 nurses (50.8%) of female nurses have a poor perception of patient safety culture, and 30 nurses (49.2%) are in the good category. Whereas for nurses with a male gender, 2 nurses (66.7%) had a poor perception, and 1 nurse (48.4%) had a good perception of patient safety culture. The results of the statistical test obtained a p value = 1.000 (p value > 0.05), so it can be said that there is no significant relationship between gender and patient safety culture in the UKI General Hospital inpatient ward. Thus, H0 is accepted and Ha is rejected. In addition, it was found that the OR = 1.935, and (95% CI = 0.167-22.484). This value indicates that the OR is > 1, which means that the female nurse group has a 1.935 times greater risk of having a poor patient safety culture compared to male nurses. Research conducted by Ritonga (2020) showed that there was no relationship between gender and patient safety culture with a p value of 0.354 > 0.05. Another study by Surahmat et al. (2019) also stated that there was no relationship between age and patient safety with a p value of 0.681 > 0.05. Researchers assume that there is no relationship in this case because of the difference in the number of female and male nurses that affects the results of the study. In addition, according to researchers, implementing patient safety is not influenced by gender because both have the same responsibilities. Both female nurses and male nurses have men who have different ways of thinking that can complement each other in providing nursing care. In the education variable, data obtained with D3 education level as many as 24 nurses (63.2%) had a poor perception of patient safety culture, and 14 nurses (36.8%) were in the good category. Then for those who took Bachelor of Nursing education, as many as 17 nurses (65.4%) had a good perception of patient safety culture, and 9 nurses (34.6%) were in the poor category. The results of the statistical test obtained a p value = 0.047 (p value <0.05), so it can be said that there is a relationship between

education and a culture of patient safety in the Inpatient Room of UKI Hospital. So based on this, H0 is rejected and Ha is accepted. In addition, it was found that the OR = 0.309 and (95% CI = 0.109-0.876). This value indicates that the OR < 1, which means that the D3 group of nurses has a 0.309 times greater chance of having a poor patient safety culture compared to the S1 Nurses group. The results of this study are in line with research conducted by Ritonga (2020) which shows that there is a relationship between education and a culture of patient safety, with a p value of 0.001 <0.05. Farida et al. (2019) stated that education level can influence a person's response to external stimuli. Someone with a high level of education tends to be more creative and open to various changes or able to adapt to renewal and remain productive. This is in accordance with the results of research at UKI General Hospital because even though the majority of nurses have D3 education levels, the number of nurses with a good patient safety culture is mostly from the S1 Nurses group. Researchers assume that this relationship exists because the higher the education, the more knowledge that can be applied in implementing patient safety culture. The working period variable shows

in nurses with working period ≤ 5 years as many as 22 nurses (75.9%) have a poor perception of patient safety culture. Whereas for nurses who have worked > 5 years, 24 nurses (68.6%) have a good perception, and 11 nurses (31.4%) have a poor perception of patient safety culture. The results of the statistical test obtained a p value = 0.001 (p value <0.05), so it can be said that there is a significant relationship between length of service and patient safety culture in the UKI General Hospital inpatient ward. Thus, H0 is rejected and Ha is accepted. In addition, it was found that the OR = 0.146, and (95% CI = 0.048-0.443). This value indicates that the OR < 1, which means that nurses with > 5 years of service have a 0.146 times greater chance of having a good patient safety culture compared to nurses who work ≤ 5 years. This is in line with research by Ezdha (2018) which states that there is a significant relationship between tenure and patient safety culture with a p value of 0.016 <0.05. Robbins & Judge (2013) states that tenure and productivity are positively related, but sometimes it can also happen the other way around. Researchers assume that there is this relationship because the length of time a person works can affect aspects of skills and experience in providing safe nursing care by implementing a patient safety culture.

Table 4 Relationship between Work Engagement and Nurse Staffing Dimensions with Patient Safety Culture in Inpatient Rooms at RSU Porsea (n=64)

Variable	Patient Safety Culture				*p value*	OR 95% CI
	Good		Not enough			
	n	%	n	%		
Work Engagement						
Tall	17	81	4	19	0,001	8,804
Low	14	32,6	29	67,4		(2,492-31,105)
Dimensi *Staffing*						
Good	22	71	9	29	0,001	6,519
Not enough	9	27,3	24	72,7		(2,191-19,390)

Based on the data in table 15, it was found that nurses with high work engagement as many as 17 nurses (81%) had a good perception of patient safety culture, and 4 nurses (19%) had a poor safety culture. Then for those who have a low level of work engagement, as many as 29 nurses (67.4%) have a poor perception of patient safety culture, and 14 nurses (32.6%) are in the good category. The results of the statistical test obtained a p value = 0.001 (p value <0.05), so it can be said that there is

a relationship between work engagement and patient safety culture in the Inpatient Room of Porsea Hospital. So based on this, H0 is rejected and Ha is accepted. In addition, it was found that the OR = 8.804 and (95% CI = 2.492-31.105). This value indicates that the OR > 1 means that nurses with low work engagement are 8.804 times more likely to have a poor patient safety culture than the group of nurses with high work engagement. These results are in line with research by Carthon et al. (2019) who obtained the results of a relationship between work engagement in nurses and patient safety culture with a p value of 0.001 <0.05. According to Kutney-Lee et al. (2016) nurses who are engaged or bound by their work will provide superior service quality because work engagement is related to positive attitudes related to work, health and welfare, behavior outside the organizational role, and performance. The researcher's assumption regarding this relationship is because by having high work engagement, nurses have an attachment to their workplace so that nurses are more enthusiastic about providing quality and safe nursing care, and implementing a culture of patient safety at work. The staffing dimension variable shows that nurses with good perceptions of the staffing dimension, as many as 22 nurses (71%) have a good patient safety culture. Meanwhile, for nurses with poor perceptions of the staffing dimension, 24 nurses (72.7%) also had a poor patient safety culture. The results of the statistical test obtained a p value = 0.001 (p value <0.05), so it can be said that there is a significant relationship between the dimensions of nurse staffing and patient safety culture in the inpatient room of RSU Porsea. Thus, H0 is rejected and Ha is accepted. In addition, it was found that the OR = 6.519, and (95% CI = 2.191-19.390). This value indicates that the OR > 1, which means that the dimension of nurse staffing that is not good is 6.519 times more likely to have a culture of patient safety that is not good either, compared to the dimension of good nurse staffing. The results of this study are in line with Carthon et al. (2019) which shows that there is a relationship between nurse staffing and patient safety culture with a p value of 0.002 <0.05. Sloane et al. (2018) stated that there is a positive relationship between nurses' perceptions of adequate staffing and safety and quality of care. The researcher assumes that there is this relationship because low nurse resources affect the ability of nurses to monitor and reflect on their actions, due to their workload.

CONCLUSION

1. There is a significant relationship between work engagement and patient safety culture in the Inpatient Room of Porsea General Hospital with p value = 0.001 (p <0.05) and OR (95% CI) = 8.804 (2.492-31.105).

2. There is a significant relationship between the dimensions of nurse staffing and patient safety culture in the Inpatient Room of Porsea General Hospital with p value = 0.001 (p <0.05) and OR (95% CI) = 6.519 (2.191-19.390).

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