



# The relationship between characteristic factors of Lavalette Hospital staff to patient safety culture behavior

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## Abstract

**Background:** Patient Safety Incident in Malang Lavalette Hospital based on data from the Committee for Quality Improvement and Patient Safety shows that there was a decrease in the incident report that occurred from 2016 to 2018. Building a culture of patient safety is an important element to improve patient safety and service quality.

**Purpose:** This study aims to determine the relationship between the characteristics of hospital staff characteristics with patient safety culture behavior.

**Method:** This research was conducted in April 2020 with a sample of 196 respondents. The design used for this research was Cross-sectional analytic research. The necessary data was collected using the Hospital Survey on Patient Safety Culture (HSOPSC) version 2.0, which was designed by the Health Research and Quality Agency (AHRQ) in 2019. Data analysis was performed using multiple regression statistical analysis with a significance level of 0.05.

**Result:** The variables after the opposite effect on the behavior of safety culture with a calculated value of -0.200 and p-value of 0.032. The calculated F value was obtained that the F count <F table (1,779 <2.15), and the p-value of 0.105 > 0.05, so it can be said that the characteristic factors of Lavalette Hospital staff did not influence the patient safety culture behavior.

**Conclusion:** based on the measurement of 10 dimensions of HSOPSC, the culture of patient safety in Malang Lavalette Hospital is included in the positive category.

**Keywords:** patient safety culture, health care system, Lavalette Hospital

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## INTRODUCTION

Hospital is one of the health service providers who play an important role in improving the public health status. The hospital is one of the complex health service institutions because of capital intensive, technology-intensive, labor-intensive, professional intensive, system intensive and quality intensive and risks intensive resources that can lead to unexpected events that can result in the occurrence of injury even to the death of the patient (Departemen Kesehatan Republik Indonesia, 2008).

Safety has become a global issue, including hospitals. Since the Institute of Medicine (1999) in the United States published a report that surprised many: "To Err Is Human", Building a Safer Health System. The report presents research in hospitals in Utah, Colorado, and New York (Greene, 2011). In Utah and Colorado, it was found that Adverse Event was 2.9%, where 6.6% of them died. Whereas in New York the Adverse Event was 3.7% with a mortality rate of 13.6%. Mortality due to

CERD in inpatients across America, amounting to 33.6 million per year, ranges from 44,000 to 98,000 per year. WHO publication in 2004, collected hospital research figures in various countries: America, United Kingdom, Denmark, and Australia, was found by CWD with a range of 3.2-16.6%. With these results, various countries immediately conduct research and develop a Patient Safety System (Departemen Kesehatan RI, 2006).

Patient safety plays an important role in the quality of health services (Haerani, 2020; Sopianah, Sabilillah, & Fadilah, 2017). To achieve this, a strong commitment from individuals and teams is needed (Pasinringi & Rivai, 2018; Wibowo, Berniyanti, & Sunariani, 2017). The combination of various elements in the hospital produces a high-risk situation. To be able to understand

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the risks involved in a complex process in health services (Putra, Jusuf, & Dewi, 2019), information is needed about various cases of error and near-missed that have existed and could occur (WHO, 2017).

Indonesia does not have a national patient safety incident recording system. Reports about Unexpected Events and Nearly Injured Events is rarely done in Indonesia that made finding data about Unexpected Events and Nearly Injured Events in Indonesia difficult to find for publication. Incident reporting records related to patient safety culture have not been fully developed by all hospitals, so the patient safety incident reporting records are still very limited. The incidents that are detected in patient safety are generally adverse events that are discovered by chance alone. Most of the others tend not to be reported, not recorded, so they go unnoticed. However, the estimated impact of losses due to the Unexpected Events and Nearly Injured Events is quite large. The impact of Adverse Event can be mild, moderate to severe disability, and can lead to mortality (Hariyadi, Silaban, & Hidayati, 2019; Soewondo, Lindarto, Wibisono, Renaldi, & Dalem-Pemayun, 2013; Gashaw, & Dinkayoh, 2015).

Every organization has a culture that can have a significant influence on the attitudes and behavior of its staff. Lavalette Hospital is one of the type B hospitals that is trying to develop a patient safety culture in the provision of health services. Based on data from the Quality Improvement and Patient Safety Committee of Lavalette Hospital there was a decrease in the incident report that occurred in 2016 there were 67 incident reports, in 2017 there were 50 incident reports and in 2018 there were 47 incident reports. The results of the analysis conducted by the Committee on Quality Improvement and Patient Safety established by Lavalette Hospital stated that the cause of the low reports of incident reporting was regarding safety culture which still could not be implemented optimally. Therefore the researcher wants to analyze the relationship of the characteristics factors of Lavalette Hospital staff to patient safety culture behavior.

## METHOD

This type of research uses a quantitative approach with a cross-sectional analytic research design. This research was conducted in April 2020 at Malang Lavalette Hospital. The population in this study consisted of health workers in Lavalette Hospital Malang. To measure the appropriate sample population and ensure the validity of the index calculated for statistical purposes, researchers used a significance level of 95%. 196 samples were included. In this study, health professionals with at least one year of clinical experience and incomplete questionnaires (5%) were excluded from the study. The variables in this study consisted of independent variables and dependent

variables. Characteristic factors of Lavalette Hospital staff are independent variables, while patient safety culture is a dependent variable.

Data was collected using the Hospital Survey on Patient Safety Culture (HSOPSC) version 2.0, which was designed by the Health Research and Quality Agency (AHRQ) in 2019 (Sorra, Gray, & Streagle, 2016). This questionnaire has been widely used throughout the world to evaluate the hospital staff's understanding of Patient Safety Culture. Data collection was carried out by giving questionnaires to the participants after explaining the purpose of the study. In addition to demographic data, HSOPSC version 2.0 is used to assess Patient Safety Culture as an independent variable and reporting of patient safety incidents as a dependent variable. The questionnaire mentioned above consists of several demographic questions in addition to questions to evaluate patient safety culture as an independent variable. The independent variable has 10 dimensions with a total of 32 question items. These dimensions consist of collaboration, management support, organizational learning, communication about mistakes, open communication, non-punitive responses to mistakes, staffing, promotive actions by managers, frequency of incident reports, and transfer of vital patient information between clinics and from one work shift to another shift. Items in HSOPSC have five options that are assessed on a five-point Likert scale (option 1: disagree, option 5: fully agree). Some items in HSOPSC are scored in a reverse way. To calculate the score for each aspect or dimension of Patient Safety Culture, the researcher summarizes the scores of all items assessing each aspect or dimension, and to determine the total HSOPSC score, the score of each aspect or dimension is added. A total score of 32-96 is interpreted as poor Patient Safety Culture, while a total score of 97-160 is interpreted as a good Patient Safety Culture. Data analysis used multiple regression statistical analysis with a significance level of 0.05.

## RESULT

This study used a sample of 196 health workers in Malang Lavalette Hospital. The following is the distribution of respondents' descriptions.

Based on **Table 1** it is known that the majority of respondents were an age group of 20-30 years with 87 people (44.4%), 143 people (73%) were females, and 109 (55.6%) had a Bachelor's degree education, 136 people (69.4%) with more than ten years of service, 140 people (71.4%) were nurses and the majority work in inpatient units as many as 72 people (36.6%). Data shows that the staffs are still quite young, but many have more than 5 years of work, this may be due to many who started careers from fresh graduates at the hospital. **Table 1** shows some characteristics groups that can be shown to the management as consideration for

**Table 1.** Characteristics of respondents and the average distribution of behavioral score patient safety culture at Lavalette Hospital (n=196)

Respondents Characteristics	N	%	Patient Safety Behaviour Mean $\pm$ SD
<b>Age (Year)</b>			
20-30	87	44.4	123.06 $\pm$ 9.666
31-40	64	32.7	118.20 $\pm$ 8.191
41-50	12	6.1	115.33 $\pm$ 6.760
>50	33	16.8	119.39 $\pm$ 8.789
<b>Sex</b>			
Pria	53	27	119.75 $\pm$ 8.012
Wanita	143	73	120.62 $\pm$ 9.617
<b>Education</b>			
Diploma	24	12.2	117.79 $\pm$ 9.189
Undergraduate	109	55.6	120.46 $\pm$ 8.984
Graduate	63	32.1	121.24 $\pm$ 9.532
<b>Years of Service (Year)</b>			
<3	51	26	121.75 $\pm$ 9.412
3-5	9	4.6	119.78 $\pm$ 9.782
>5	136	69.4	119.91 $\pm$ 9.099
<b>Profession</b>			
Nurse	140	71.4	119.74 $\pm$ 8.895
Medical Analytic	14	7.1	120.36 $\pm$ 7.541
Pharmacist	8	4.1	128.25 $\pm$ 5.922
Pharmaceutical Technical Workers	14	7.1	122.64 $\pm$ 14.08
Nutritionist	8	4.1	120.01 $\pm$ 8.767
Midwife	12	6.1	120.38 $\pm$ 9.199
<b>Work Unit</b>			
Emergency Room	6	3.1	122.33 $\pm$ 7.367
Operating Room	46	23.5	120.76 $\pm$ 7.677
Hemodialysis	28	14.3	121.11 $\pm$ 9.681
Laboratory	14	7.1	120.36 $\pm$ 7.541
Pharmacy	22	11.2	124.68 $\pm$ 11.91
Inpatients	72	36.6	118.43 $\pm$ 9.238
Nutritio	8	4.1	120.01 $\pm$ 8.767

improvement, including staff at the age of around 31-50 years, more male staff, and more staff with more than 3 years of service. Staff with a working period of more than 3 years are known to have a low mean value compared to staff with a work period of fewer than 3 years, this is possible because the staff is familiar with the work environment, resulting in a sense of comfort but are resistant to hospital policies in implementing cultural behavior patient safety. The nursing staff also had a lower mean value than the others, whereas in pharmacists the value was quite high. It also needs to be examined why they can achieve this high score, so that it can be used as consideration and demonstration in subsequent programs. Then the last part of the inpatient unit also requires attention because the value of cultural behavior is lower than the other parts. The following are the mean and total values of the dimensions of patient safety culture in Malang Lavalette Hospital.

Based on **Table 2**, it can be seen that the dimension which has the highest mean value is the Communication Openness dimension, it can be interpreted here that Lavalette Hospital has formed open communication between members in their daily implementation. While the dimension with the lowest mean is the Reporting Patient Safety Events dimension, this can be a concern of management to be the focus of the program to make

**Table 2.** Mean & Total Score of Patients Safety Culture (n=196)

Dimension	Mean	Standard Deviation	Mean
1. Teamwork	12.59	1.247	12.61
2. Staffing and Work Place	12.65	2.678	12.65
3. Organizational Learning-Continuous Improvement	12.83	1.190	12.83
4. Response to Error	14.41	2.993	14.41
5. Supervisor, Manager, or Clinical Leader Support for Patient Safety	11.47	1.793	11.48
6. Communication About Error	12.94	2.077	12.94
7. Communication Openness	16.47	2.182	16.47
8. Reporting Patient Safety Events	7.37	2.384	7.38
9. Hospital Management Support for Patient Safety	11.59	1.673	11.59
10. Handoffs and Information Exchange	10.48	2.575	10.49
Total Score Budaya Keselamatan Pasien			122.85

**Table 3.** The results of multivariate analysis between the characteristics factors of Lavalette Hospital staff with patient safety culture behavior (n=196)

Variables	t <sub>count</sub>	P
Constanta		
Sex	0.128	0.119
Age	-0.200	0.032
Years of Service	0.052	0.562
Education	0.050	0.575
Profession	0.013	0.872
Working Units	0.115	0.129

F<sub>count</sub> = 1.779  
p = 0.105  
R<sup>2</sup> = 0.053

further improvements. This illustrates that the reporting of patient safety incidents is still very low and not good. In **Table 2** it can also be seen that the total value of patient safety culture is in a good category. The following are the results of multivariate analysis between the characteristics factors of Lavalette Hospital staff and patient safety culture behavior.

Based on **Table 3**, it is known that only the age variable influences the opposite direction to patient safety culture behavior, meaning that the younger the age the better the patient safety culture behavior. From the calculated F value, it was found that the F count <F table (1,779 <2.15), and the p-value of 0.105 > 0.05, so it can be said that the characteristic factors of Lavalette Hospital staff did not influence simultaneously on patient safety culture behavior. This can also be seen from the value of R Square which has a value of 0.053, this means that the characteristic factors have a contribution of 5.3% on the patient safety culture behavior.

## DISCUSSION

Based on the results of the study, the age of staff who have high values of high patient safety culture behavior is in the range of 20-30 years. The age range is in the stage of young adulthood which is the time when a person has a peak development in physical condition (DeMarco, Nystrom, & Salvatore, 2011). The young adult stage is also the stage a person starts to have a

clear career. Age has a relationship with productivity, absenteeism, and job satisfaction of the individual. A person's productivity will decrease with increasing age because with age there will be a decrease in speed, dexterity, strength, coordination over time, and the presence of protracted boredom and lack of intellectual stimulation (Nurmansyah & Kilic, 2017). Hospitals need to be more careful in managing staff so that productivity is maintained at the age of 30 years by looking at the potential that can be increased by staff at that age. This is because with increasing age will also increase the wisdom of one's ability to make decisions, think rationally, emotions control, tolerance, responsibility, and more experience so that it can positively influence performance (Emmanuel, Julius, & Gbolo, 2017).

In terms of gender, the respondents were mostly female. Gender is a variable that expresses a biological category, so it is a human trait related to the culture of each sex. Gender characteristics are also often considered to be a determinant of causality in the workplace, one of which plays a role in the socialization process. Men are often associated with ambitious and more competitive nature so that they always look for leadership, while women are more emotional so that they are natural listeners and supportive of others so that it can be said that women have the basic nature that supports them to carry out the care process (Sarwono & Soeroso, 2001). The traditional role of women as wives, mothers, and sisters is always involved in family care. Therefore, women become a gender that has the instinct and sense of empathy to provide care to the community. In this case, the hospital in addition to providing a hard skill training can also include guidance and training that leads to the development of soft skills, especially for the male staff.

Education is one of the important factors that should be considered in allocating human resources. Based on the results obtained that all hospital staff who have high patient safety culture behavior values are at the S2 level. Marpaung believes that a better level of education will create a better work culture. This is the basis for hospital management in empowering medical and health personnel in providing services for patients. The hospital management also needs to provide support to staff or employees so that they are always motivated to improve their level of education both formal and informal. Besides, the hospital also needs to pay attention to the continual increase in employee scientific knowledge (Marpaung, 2005).

Based on the results of research that staff with a working period of fewer than 3 years have a higher patient safety culture behavior than those who work for more than 3 years. The results of this study are in line with the results of research by Nurmalia which mentions work experience between the intervention groups under the control group having more ability to accept changes in efforts to improve the patient safety culture. This is

related to employees who have a longer service life tend to feel comfortable and resistant to change (Nurmalia, 2012). The length of work should reflect work experience and can increase knowledge of a matter so that it also determines the staff in carrying out their daily functions. The longer a person works, the more skilled and experienced in carrying out the work. The hospital needs to find and improve the factors that reduce staff performance with a work period of more than 3 years and make efforts to increase employee commitment and performance so as not to experience a decrease in work quality that can affect the quality and service quality decline and low cultural behavior patient safety.

The patient safety culture behavior in the nursing profession compared to other health professionals in the Lavalette Hospital is relatively low. Nurses have an important role in the process of implementing patient safety in hospitals. That is because nurses are the most important component in the hospital. In type B hospitals such as Lavalette Hospital, for example, which has several beds above 200, it should have the same number of nursing staff according to the 1: 1 ratio, which has become a rule in the administration of services in hospitals. Apart from the numbers, nurses are also the staff who interact more frequently with patients than other workers in the hospital because the health services provided to patients or commonly referred to as nursing care lasts 24 hours. The wide role of nurses causes differences in workload between nurses and other health workers in hospitals, making it more likely to find and experience the risk of service errors. Fatigue can have an impact on care services provided is not optimal. The high workload can affect decreasing the performance of hospital staff (Nursalam, 2011). Therefore it is necessary to make adjustments to the workload of nurses so as not too overworked it so that nurses can carry out their functions optimally and achieve job satisfaction, which ultimately results in satisfying performance and can implement patient safety culture properly and correctly. Continuing education at the hospital through a continuous learning process must also be done so that the nurses' cognitive also improves and is expected to lead to a positive patient safety culture.

Work units that are considered low in patient safety culture behavior in Lavalette Hospital are in the inpatient unit. Inpatient services are one service unit that provides comprehensive services. The complexity of services related to resources and the service process within the inpatient unit is prone to error and thus requires more effort from all staff to achieve optimal services and produce a positive patient safety culture. Therefore, the hospital needs to make maximum efforts and evaluate the input, process, and output of inpatient work units, to identify the factors that can reduce the behavior of patient safety culture and make improvements in



performance and efforts that can boost the performance of inpatients.

Overall, the results showed that the characteristics of Malang Lavalette Hospital staff did not influence patient safety culture behavior. Of the 6 characteristics studied only the age factor had a significant effect on patient safety culture behavior. This study is following Anugrahini et al's research which states that there is a significant relationship between age and nurse compliance in implementing patient safety guidelines (Anugrahini, Sahar, & Mustikasari, 2010). The results of this study are also consistent with Robbins's opinion which states that age can affect one's physical, mental, workability, and responsibility responsibilities (Nurmansyah & Kilic, 2017). Henriksen said that age is one of the factors that can influence the onset of KTD (Unexpected Events) (Henriksen, Dayton, Keyes, & Carayon, 2008). In contrast to Roger's research, which says age does not affect error (Rogers, Hwang, Scott, Aiken, & Dinges, 2004).

In terms of aspects of forming a patient safety culture, almost all aspects have been implemented well. This means that patient safety culture behavior in Malang Lavalette Hospital is positive. It's just that for the Reporting Patient Safety Events dimension or reporting of patient safety events is still relatively low compared to other aspects. Event reporting is an important system in helping to identify patient safety problems and in providing data to the organization and learning system. Some obstacles in the incident reporting system include fear of punishment, focus on punishment, focus on unclear identity, ergonomics of incident reporting forms,

confusion from the law of unexpected events / near misses, sentinel, insignificant influence in improving service quality, lack of support from the profession, lacking feedback (Grøndahl et al., 2018). According to the NPSA (National Patient Safety Agency), the five steps towards an incident reporting system include providing feedback to staff when they provide incident reporting, focusing on learning about events with root causes, training on incident reporting, and internal reporting competitions. Another step is to make an easy tool to record incident reports, to make reporting as an effort to improve quality, as well as a culture rather than looking for individual mistakes (Dwi Setiowati, 2010).

## CONCLUSION

Based on the results of the study showed that the characteristics of Malang Lavalette Hospital staff consisting of gender, education level, years of service, profession, and work units did not affect the patient safety culture behavior. Age factor has a significant effect on patient safety culture behavior. Staff with age > 30 tend to be low in patient safety culture behavior so it needs attention from hospital management. Based on the measurement of 10 dimensions of HSOPSC, the culture of patient safety in Malang Lavalette Hospital is included in the positive category. The aspect of reporting on patient safety incidents is considered to be the lowest among the 9 other dimensions of patient safety culture so that hospitals need to seek effective measures to overcome obstacles in reporting patient safety incidents.

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