

Factors Affecting Patient Safety in Working at the Madiun Hospital (RSUD Madiun)

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ABSTRACT

Patient safety in hospitals is a service system in a hospital that provides safer patient care. The purpose of the study was to analyze the factors that affect patient safety in working. The research design used was quantitative with cross-sectional approach. The population of all nurses in Madiun Hospital was 195 respondents. The sample of some nurses was 131 respondents with purposive sampling. The results showed that there was an influence on the role of communication ($p=0.001$), environmental conditions ($p=0.003$), distractions at work ($p=0.014$), workload ($p=0.042$) and staff education ($p=0.000$). Multivariate analysis showed that the most influential variable on patient safety was staff education with a significance level of $p=0.000$ and $B=0.068$. It is expected that nurses in providing health services must improve the quality which will be able to provide comfort and quality services to patients in terms of improving patient safety.

Keywords: nurses, patient safety, work

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BACKGROUND

Health care for each individual is carried out by health workers, one of which is a nurse. Law Number 38 of 2014 concerning nursing provides an understanding of nurses which explains that a nurse is a person who has completed higher education and graduated from domestic and foreign universities in the field of nursing whose standards are recognized by the government in accordance with applicable regulations (Rosyidi, 2020).

Patient safety is a topic that has become a topic of discussion in recent decades. Patient safety is defined as a failure to complete what was planned or achieve something using the wrong way (Doweri, Raoush and Batiha, 2015). In short, there are two elements in patient safety, namely the existence of a medical plan (plan) and a goal (aim). This means that there are 2 possible causes of errors, namely the medical service provider made the wrong plan so that the patient was injured, and the service provider was right in planning but there was an error in the implementation that caused the patient injured. This error can occur due to several things, such as disruption of the work environment, fatigue, lack of team coordination, and communication failure (Gao *et al.*, 2019).

The Institute of Medicine (IOM) has summarized the evidence on patient safety as it relates to patient safety in the United States. The Institute of Medicine (IOM) says nearly 100,000 American patients die from medical injuries. This figure exceeds the number of deaths from cancer or traffic accidents. even Incidents or accidents in the aircraft industry occur only once in 3 million flights. Compare that with medical incidents that occur in hospitals which are 2-16 out of 100 patients. This means that being on an airplane is 100,000 times safer than in a hospital (Astini, 2016). IOM has suggested that the biggest challenge in moving towards a safer healthcare system is changing the patient safety culture (PSC) from one where people are blamed for mistakes to one where mistakes are treated as opportunities to improve the health care system and prevent harm (Dabi *et al.*, 2021).

The University School of Medicine predicts that there are about 250,000 people in the United States who die because of the mistakes of doctors and nurses. Of the number of deaths due to adverse events, more than 50% were caused by preventable adverse events. There are various kinds of adverse events, including giving the wrong medication, misreading the results of laboratory tests and misdiagnosing the patient. The adverse event was caused by various factors, such as doctor fatigue, equipment that did not function properly or nurses who recorded it incorrectly (Miller, 2019).

The level of patient safety reporting in Indonesia is still low. In 2019 only 12% of 2,877 hospitals reported patient safety incidents, with a total of 7,465 patient safety incident reports. Patient safety in Indonesia is often found in health care institutions. The incidence of patient safety is reported to be around 3-6.9% in patients undergoing hospitalization (Amir and Purnama, 2021).

Madiun Hospital is a class C Government Regional General Hospital belonging to the Madiun City Government which is strategically located so that the trend of the number of visits every year is increasing. Due to the Covid-19 pandemic, the Madiun Hospital experienced a significant decrease in income. However, quality health services are still prioritized by the Madiun City Hospital, so that there is no increase in patient safety cases carried out by health workers. Based on the Patient Satisfaction Index of the Madiun City Hospital in 2020, a score of 80,187 was obtained with the service quality category B. This means that the health services provided by the Madiun City Hospital to the community are well received and of good quality (PPIDI, 2021).

Patient safety incident report data at the Madiun Hospital in 2020 were from the cause of clinical administration 42.9%, clinical processes (procedures) 7.1%, nosocomial infections 3.6%, medications (infusion fluids) 17.9%, equipment health 7.1%, patient 10.7%, fall 3.6%,

laboratory (pathology) 3.6%. The highest reported incidents related to patient safety were clinical administration including handovers, appointments, waiting lists (queues), referrals (consultation), admissions and in/out of inpatients/hospitals.

Nursing practice sometimes finds that the occurrence of patient safety carried out by nurses at work raises concerns for the community to seek treatment. Due to errors or omissions that occur in each nurse's actions, the public's sense of trust in them is reduced. Due to errors or omissions caused, in practice this is a dangerous thing for the safety of a patient. So it requires supervision from both nurses and hospitals where they work. Staff education is also considered to be one of the factors included in human error in patient safety. Education is all planned efforts to influence other people, whether individuals, groups, or communities so that they do what is expected by education actors (Notoatmodjo, 2012). This educational level consists of the educational background possessed by nurses in carrying out nursing practice consisting of formal education and training that they already have.

Judging from the importance of decreasing patient safety rates in the work carried out by nurses, the researcher wish to know the factors that influence patient safety in working at the Madiun Hospital.

METHODS

This study uses a quantitative research design with analytical observational research methods with a cross-sectional approach. The study was conducted from March 31, 2022 to April 15, 2022. The study population was all nurses at the Madiun Hospital with 195 respondents, while the sample was some nurses at the Madiun Hospital with 131 respondents. The independent variables were communication factors, environmental conditions, work disturbances, workload and staff education. The dependent variable was patient safety at work. The research instrument was a questionnaire that hasd been tested for validity and reliability. The analysis used in this research is univariate analysis, bivariate analysis and multivariate analysis. Ethics in this research is based on the consent form to become a respondent, anonymity and confidentiality. The research has passed the ethical feasibility test with the number 2924/KEPK/III/2022.

RESULTS

The research was conducted at the Madiun Hospital. Established since April 20, 2004 with staff consisting of civil servants, Madiun City Government Contracts and Hospital Contracts. The existing facilities, infrastructure, and/or facilities are adjusted to the service standards for each installation. In the development of technology, services at the Madiun Hospital are also supported by the use of IT.

The results of the study were nurses with a total of 131 respondents at the Madiun Hospital. The frequency distribution table for the characteristics of research subjects is described in table 1.

Table 1. Characteristics of research subjects based on age, gender, years of service, latest education, position, work space and employment status

| Characteristics | n | % |
|-------------------------|----|------|
| Age | | |
| <mean (34) | 70 | 53,4 |
| ≥ mean (34) | 61 | 46,6 |
| Gender | | |
| Male | 67 | 51,1 |
| Female | 64 | 48,9 |
| Years of service | | |
| < 1 year | 30 | 22,9 |

| Characteristics | n | % |
|----------------------------------|-----|-------|
| ≥ 1 year | 101 | 77,1 |
| Last education | | |
| Diploma 3 | 105 | 80,2 |
| Bachelor degree (S1) / Diploma 4 | 26 | 19,8 |
| Position | | |
| Nurse | 131 | 100,0 |
| Work spaces | | |
| Emergency room | 16 | 12,2 |
| Inner poly | 3 | 2,3 |
| Eye poly | 2 | 1,5 |
| Surgery poly | 3 | 2,3 |
| Orthopedic poly | 3 | 2,3 |
| Pulmonary Poly | 2 | 1,5 |
| Neurology | 2 | 1,5 |
| General poly | 2 | 1,5 |
| PACU | 10 | 7,6 |
| ICU | 10 | 7,6 |
| ICCU | 8 | 6,1 |
| Cendana | 10 | 7,6 |
| Mawar | 10 | 7,6 |
| Melati | 10 | 7,6 |
| WijayaKusumua | 10 | 7,6 |
| Seruni | 10 | 7,6 |
| Anggrek | 10 | 7,6 |
| Dahlia | 10 | 7,6 |
| Employment status | | |
| Civil servant | 91 | 69,5 |
| Contract employees | 10 | 7,6 |
| BLUD | 30 | 22,9 |

Source : Data Primer, 2022

Table 1 shows the results of the characteristics of research subjects based on age, gender, years of service, last education, position, work space and employment status. In the age category of respondents, the results showed that most of the respondents were less than the average value (34 years) with 70 respondents (53.4%). The gender of the respondents was mostly male with 67 respondents (51.1%). Most of the respondents worked more than 1 year with 101 respondents (77.1%). In the education category, the majority of respondents are from diploma 3 (D3) with 105 respondents (80.2%). In the position variable, all respondents have positions as nurses with 131 respondents (100.0%). The majority of respondents work in the emergency room with 16 respondents (12,2%). Most of the respondents' employment status was civil servants with 91 respondents (69.5%).

Table 2. Characteristics of research variables

| Characteristics | N | % |
|--------------------------------|----|------|
| Communication | | |
| Low (< mean (54)) | 77 | 58,8 |
| High (≥ mean (54)) | 54 | 41,2 |
| Environmental condition | | |
| Low (< mean (50)) | 52 | 39,7 |
| High (≥ mean (50)) | 79 | 60,3 |

| Characteristics | N | % |
|--------------------------|----|------|
| Work disturbance | | |
| Low (< mean (79)) | 55 | 42,0 |
| High (\geq mean (79)) | 76 | 58,0 |
| Workload | | |
| Low (< mean (61)) | 56 | 42,7 |
| High (\geq mean (61)) | 75 | 57,3 |
| Staff education | | |
| Low (< mean (62)) | 58 | 44,3 |
| High (\geq mean (62)) | 73 | 55,7 |
| Patient Safety | | |
| Low (< mean (62)) | 59 | 45,0 |
| High (\geq mean (62)) | 72 | 55,0 |

Source : Data Primer, 2022

Table 2 shows the results of the characteristics of the research variables, namely communication, environmental conditions, distractions at work, workload, staff education and patient safety at work. The majority of respondents have low communication category with 77 respondents (58.8%). In the environmental condition variable, most of them have high environmental conditions with 79 respondents (60.3%). Distractions at work respondents have a high category of work disturbance with 76 respondents (58.0%). In the workload category, most of the respondents had a high workload with 75 respondents (57.3%). The majority of respondents have a high staff education category with 73 respondents (55.7%). In the variable of patient safety at work, most of them have high patient safety at work with 72 respondents (55.0%).

Cross tabulation of factors that affect patient safety in working at the Madiun Hospital in 2022

Table 3. Cross tabulation of factors that affect patient safety at work

| Variable groups | Chategories | Patient safety | | p | r |
|--------------------------|------------------|----------------|-------------------|-------|-------|
| | | Low (21) | High (\geq 21) | | |
| Communication | < mean (54) | 54 (41,2%) | 23 (17,6%) | 0,000 | 0,734 |
| | \geq mean (54) | 5 (3,8%) | 49 (37,4%) | | |
| Environmental conditions | < mean (50) | 49 (37,4%) | 3 (2,3%) | 0,000 | 0,871 |
| | \geq mean (50) | 10 (7,6%) | 69 (52,7%) | | |
| Work diturbances | < mean (79) | 48 (36,6%) | 7 (5,3%) | 0,000 | 0,778 |
| | \geq mean (79) | 11 (8,4%) | 65 (49,6%) | | |
| Workload | < mean (61) | 44 (33,6%) | 12 (9,2%) | 0,000 | 0,709 |
| | \geq mean (61) | 15 (11,5%) | 60 (45,8%) | | |
| Staff education | < mean (62) | 45 (34,4%) | 13 (9,9%) | 0,000 | 0,786 |
| | \geq mean (62) | 14 (10,7%) | 59 (45,0%) | | |

Source : Data Primer, 2022

The results of calculations using *Pearson's product moment* get a p-value of $0.000 < (0.05)$ and a value of $r = 0.778$, because the $p\text{-value} < 0.05$, the H_0 is rejected. This shows that there is an influence of work disturbance factor on *patient safety* while working at the Madiun Hospital. The results of calculations using *Pearson's product moment* get a p-value of $0.000 < (0.05)$ and a value of $r = 0.709$, because the $p\text{-value} < 0.05$, the H_0 is rejected. This shows that there is an influence of workload factors on *patient safety* when working at the Madiun Hospital.

The results of calculations using *Pearson's product moment* get a p-value of $0.000 < (0.05)$ and a value of $r = 0.786$, because the $p\text{-value} < 0.05$, the H_0 is rejected. This shows that there is an influence of staff education factors on *patient safety* when working at the Madiun Hospital.

Table 4. Results of Multivariate Analysis of the Influence of Factors Affecting Patient Safety in Working at the Madiun City Hospital

| Variables | Unstandardized Coefficient | | Standardized Coefficient | Sig. |
|--------------------------|----------------------------|-----------|--------------------------|-------|
| | B | Std.Error | Beta | |
| Communication | 0,058 | 0,016 | 0,205 | 0,001 |
| Environmental conditions | 0,078 | 0,026 | 0,281 | 0,003 |
| Work disturbances | 0,028 | 0,011 | 0,171 | 0,014 |
| Workload | 0,042 | 0,020 | 0,125 | 0,042 |
| Staff education | 0,068 | 0,015 | 0,266 | 0,000 |

Adjusted R Square = 0,820

Note: linear regression test

The results of linear regression analysis show the number R Square 0.820, which means that this study can explain 82.00% of the influence of variables in the study (the role of communication, environmental conditions, work disturbances, workload and staff education) on patient safety. The results of the p value showed that there was an influence on the role of communication ($p = 0.001$), environmental conditions ($p = 0.003$), work disturbances ($p = 0.014$), workload ($p = 0.042$) and staff education ($p = 0.000$). Multivariate analysis showed that the most influential variable on patient safety was staff education with a significance level of $p=0.000$ and $B=0.068$.

DISCUSSION

The Influence of Communication Factors on Patient Safety at Work

Safety has become a global issue, including for hospitals. Hospital patient safety is a system in which hospitals make patient care safer. The system includes: risk assessment, identification and management of related patient risks, incident reporting and analysis; the ability to learn from incidents and their follow-up and implementation of solutions to minimize risks (Ukah *et al.*, 2018). Patient Safety Targets (SKP) are the main basic standard indicators in hospital accreditation assessment, patient safety is an important part in nursing services because patient safety is a variable to measure and evaluate the quality of nursing services that have an impact on health services (Lee and Dahinten, 2020).

In an effort to improve patient safety, effective two-way communication between management and staff is necessary for the development of a positive safety culture. Communication is a process by which information is exchanged and understood by two or more people, usually with the intention of motivating or influencing behavior (Hessels *et al.*, 2019).

Based on the results of research in the field, the researcher assumes that communication must be effective both between health workers and with patients. Because effective communication will result in a common understanding and prevent communication failures

that can lead to an increase in the incidence of patient safety incidents. Communication related to various information about the patient's condition is a basic component of patient safety. Transfer of information is essential to ensure the effectiveness and safety of patient care. The essence of patient safety is the prevention of unexpected or clinical events related to patients in the health care process. Thus, unexpected events that often occur in patients during hospitalization which are very detrimental to both the patient and the hospital can be prevented.

The Influence of Environmental Conditions on Patient Safety at Work

The environment is everything both physical, biological and social that surrounds humans as well as external influences that affect human life and development. Environmental conditions consist of the physical, biological, and social environment. The environment of the structure is also all the facilities and services needed for both physical and spiritual health. A healthy environment can be interpreted as an environment that can provide appropriate shelter and can also grow a perfect life both physically, psychologically and socially (Hasibuan and Ishak, 2020).

Based on the results of research in the field, the researcher assumes that the occurrence of patient safety incidents in a hospital will have a detrimental impact on the hospital, staff, and patients in particular because they are service recipients. As a result, the level of public trust in the hospital will decrease. In this case, it is related to the work environment, both in terms of the physical and non-physical environment.

The Influence of Work Disturbance Factors on Patient Safety at Work

Work disturbance is significantly associated with the occurrence of patient safety incidents in inpatient wards. Disturbances at work include: the state of the work environment, conditions of air/temperature regulation in the workspace, lighting arrangements for the workspace, use of work equipment in the workspace, and the physical and mental conditions of nurses. All of these aspects can reduce the risk of patient safety incidents if arranged in such a way as to create a comfortable workspace that minimizes interruptions/interruptions of nurses in providing health services (Mulyana, 2013).

Based on the results of research in the field, the researcher assumes that it is important to minimize work disturbances while providing health services to patients. The condition of nurses who are able to adapt while working by putting aside all disturbances that arise will reduce the risk of accident incidents in patients and improve the quality of health services which have an impact on increasing the level of public trust in hospital services.

The Influence of Workload Factors on Patient Safety at Work

Nurse workload is all activities or activities carried out by a nurse while on duty in a nursing service unit. Thus the workload that must be borne by nurses depends on the duties of nurses in a nursing service unit (Maharani and Budianto, 2019). The nurse's workload occurs over a certain period of time, so that sometimes the workload is very light and at other times it can be excessive. The workload is influenced by internal factors and external factors. Internal factors can be influenced by somatic factors and psychological factors, while external factors are caused by environmental factors, namely tasks, work organization, work environment (Safitri and Astutik, 2019). At work, what is needed when carrying heavy loads is the work of the muscles, heart, and lungs. If the physical workload is high, the work of the muscles, heart, and lungs will also be high. Each worker has different abilities and workload limitations, therefore the workload must be adjusted to the conditions of the worker's ability. In addition, the workload can also have a negative impact on the health of workers and can reduce productivity (Muzakkir, Tapi and Kadir, 2021). The Work Load Analysis (WLA) method is carried out to determine the level of work efficiency based on the total percentage of the workload of the given job in completing its work (Haryanto, Kodyat and Rahayu, 2018).

Based on the results of research in the field, researcher assumes that fast and appropriate services are needed in hospital services. This results in a high workload on nurses thereby increasing work stress on nurses. The impact of this stress can increase patient safety incidents. Thus, workloads that are in accordance with standards must be applied in all health agencies in order to obtain optimal service quality.

The Influence of Staff Education Factors on Patient Safety at Work

In carrying out the task of providing health services, a nurse must be guided by the Standard Operating Procedure (SOP) as a standard that must be met by every health worker in carrying out his work in the health service process. SOPs can be used as a benchmark whether a work process has been carried out according to established standards. A complete and clear SOP will minimize the occurrence of patient safety incidents (Heriyati, Al-Hijrah and Masniati, 2019).

Based on the results of research in the field, the researcher assumes that a high level of education can affect the skills of nurses in implementing patient safety guidelines. The level of education is an experience that functions to develop the ability and quality of one's personality, where the higher the level of education, the greater the use of knowledge and skills. A higher level of education usually causes a person to be more capable and willing to accept his position and responsibilities.

CONCLUSION

Communication, environmental conditions, workload, work disturbances, and staff education are factors that significantly affect patient safety at work. It is expected that nurses in providing health services must improve the quality which will be able to provide comfort and quality services to patients in terms of improving patient safety.

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