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Patient Identification Impact Towards Patient Safety

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The big issue that was happened in X Hospital particularly in 2018 is mainly related to the patient's status assessment and effective communication. It focuses on reporting critical laboratory value which can inhibit the follow-up of treatment and patient safety. This research aims to provide empirical evidence of patient identification effect and effective communication of patient safety through the quality of hospital services. A quantitative analytical method with a causality research design was used as the research method. The analysis unit is the inpatient unit in X hospital. In this study, the multinomial logistic analysis and multiple regression were used for data analysis. The results of this research showed that the patient's identification and effective communication as well as the quality of hospital services were significantly affected to patient safety. In this study, we obtain the patient identification has positively affected and significant on patient safety and quality of hospital services. For the effective communication, which focuses on reporting critical laboratory value, does not affected patient safety and quality of hospital services. Quality of hospital services does not mediate patient safety cause patient's identification, and effective communication influence directly on patient safety.

Keywords: Safety, Identification, Effective communication, Quality of services.

1. INTRODUCTION

Patient safety has been recognized as a priority in health care, should be implemented in the hospital because it can cause direct injury to the patient, also related to the quality and image of the hospital [1]. Typically, Patient safety in a hospital is caused by many things, including the identification of patients, effective communication in reporting the critical value of the laboratory, and the quality of hospital services. The application of patient safety management in hospitals plays a significant role in the effort to prevent or minimize the occurrence of adverse patient safety incidents. Patient safety incidents are accidental events and conditions that result in or potentially lead to preventable injury to the patient, a patient safety incident (IKP) consisting of unexpected events (KTD), an event Injury (KTC), an almost injured incident (KNC) [2]. Patient safety is the obligation of all parties relating to the health service provider. The World Health Organization (WHO) has also declared the importance of safety in the patient's service is fundamental principle of patient care and a critical component of quality management [3]. According to data From WHO in 2004, which collected the research figures of hospitals in various countries: America, UK, Denmark, and Australia, found KTD with a range of 3.2%-16.6%. The Joint Commission International (JCI) in 2013 reported the KTD 10% range and in the United Kingdom, and 16.6% in Australia. In Indonesia, research which conducted by Utarini et al., 2000, showed that the KTD number is quite varied. 80.0% to 98.2% for the misdiagnosis and false medication of 4.1% to 91.6%. Around 65% of the KTD that took place at the hospital have led to the patient's death. According to the Hospital Patient Safety Committee (KKPRS, 2010), KTD incident in Indonesia reached 46.67% with West Java province having the highest rate of 33.33%, followed by Banten Province with 20.0%, Central Java with 20.0%, DKI Jakarta with 16.67% incident, Bali at 6.67% and East Java at 3.33% [4]. Based on data in X hospital in 2018 over previous research, there were 33% KTD existing, 58% KTC, 9% KNC [5]. The average monthly figure of mistakes in 2018 caused by the identification process was 28%, and the number of late laboratory critical value reports in 2018 was 36%. This figure is considerably high from the 0% expected target set by the hospital. This issue

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is essential to be further analyzed, since, based on 2018 data, the number of KTD, KTC, KNC, and incidents at Hospital X that happened caused by patient misidentification was still high, causing fatal impact for the service. Critical values reporting from laboratories that have not yet meet the stated target can hinder follow-up treatment and patient safety.

2. METHODOLOGY

Patient safety is a system which makes hospital services more secure. It includes risk assessment, identification, and management of matters related to the patient's risk, reporting, and analysis of incidents, the ability to learn from incidents and follow-up and implementation of solutions to minimize risk [6]. The Agency for Healthcare Research and Quality Patient Safety Network extends the definition of hazard prevention, which is freedom from accidental or preventable injuries produced by medical care [7]. Here, service safety in hospitals, one of them starts from the accuracy of patient identification. Patient identification errors which were happened in early stage will have an impact on service faults at a later stage. The identification of patients system of identification for the patient to distinguish between patients and others using two identification markers used in the treatment, therapy, service [8]. The patient identification bracelet is the most commonly used method to prevent misidentifying patients. There are patient name and a medical record number in every wristband, and verification is always done at the time of medical treatment.

The patient identification process is closely related to the procedure to be performed on the patient. Mistakes caused by carelessness can continue to occur if the patient does not have a bracelet or if the bracelet does not contain accurate information for the patient's identification [9]. In the process of verifying the level of conformity in the patient's bracelet must comply with hospital SOP, in order to comply with international safety objectives [10]. H_1 identification of the patient affects the quality of hospital services. Here, the communication is considered effective when timely, accurate, complete, not ambiguous, and accepted by the recipient of information aimed at reducing errors and improving patient safety [11]. Thus, the effective communication between medical personnel and medical support will achieve laboratory critical value reporting, and immediate action will affect the service quality of a hospital [12]. H_2 Effective communication affects the quality of hospital services.

The patient identification process must be strictly implemented according to the Patient safety standard procedure, using two identifying systems such as full name and date of birth. Always confirm the identity of the patient at the time before medical action [13]. H_3 the identification of the patient affects patient safety. Where, the effective communication and good collaboration between doctors and laboratory officers are required to identify the most appropriate alert threshold, which signifies risk and should be immediately followed up for patient safety [14]. H_4 Effective communication affects the safety of patients. The difference between the reality and expectations of the customers for the service they received or gained. There are five main dimensions of service quality, i.e., direct evidence (tangible), (reliability), responsiveness, Assurance, and empathy [14]. Thus, a safety culture such as incident reporting, the need for effective communication and teamwork among the team is recommended for patient safety [14]. Thus, the quality of service affects customer satisfaction and ultimately influences customer loyalty [15]. H_5 Quality Hospital service affects the safety of patients. Thus, we proposed the several hypotheses in this study, as follows:

H_1: ***There is a patient identification influence on the quality of hospital service.***
H_2: ***There is an effective communication influence on the quality of hospital services.***
H_3: ***There is a patient identification effect on patient safety.***
H_4: ***There is an effective communication effect on patient safety.***
H_5: ***There is a quality influence on hospital service to patient safety.***

Thus, the conceptual research framework in this study can be captured in Figure 1.

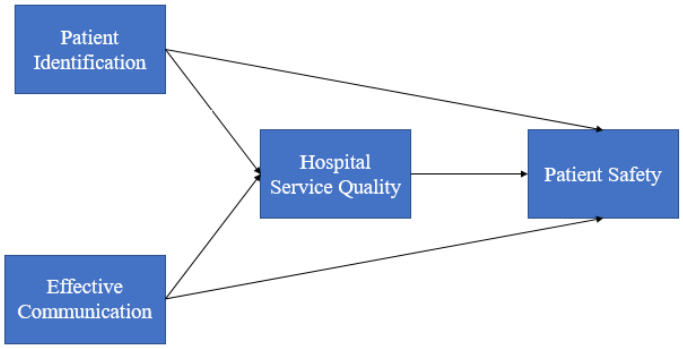

Figure 1. Conceptual Research Framework

A. Population and Sample

This study used a quantitative approach, conducted from April to July 2019, in the Inpatient service unit at hospital X. The population in this research was the entire nurse of hospital X, Tangerang. As many as 256 nurses were listed with samples of 165 inpatient nurses. Equation one expressed the amount of sample from several indicator.

$$\textit{Number of Samples} = \textit{Indicators Number} \times 5 \quad (1)$$

where, each question in the questionnaire is a variable observed, the research questionnaire is 30 statements or questions. It can be said that the number of samples

required is 5 x 30 = 150 respondents. This study added 10% as anticipation of drop outs, resulting in 165 nurses at Hospital X, Tangerang, answered the questionnaire. This study used a questionnaire poll to obtain primary data (patient identification and quality hospital service) and secondary data (patient safety and effective communication data) taken from the Hospital's Quality Assurance monthly reports. A Likert Scale is used to answer research questions. Before getting distributed to nurses, this research instrument of Patient Identification and hospital service quality had been tested on both validity test and reliability test. The validity test result is calculated using the Corrected item. Total Correlation item with a value of R > 0.361, the reliability test results using the Cronbach Alpha (α) test > 0.6, resulting in all patient identification variables and the quality of the Hospital service quality are all reliable. Data analysis in this study used multinomial logistic regression analysis models and multiple linear regression analyses by using A statistical application program, SPSS for Windows version 23. Multinomial Logistics regression analysis is used since the Y variable is qualitative or categorical, where the average value cannot be calculated. Thus, it is not distributed normally but used distributed multinomial instead. Multiple Linear regression analysis is used because dependent variables are ratios or intervals, and the model has more than one independent variable.

B. Variable Measurement

Patient safety variables are taken from existing secondary data in hospitals, which is measured from monthly incident data that happens under the categories of nearly injured events (KNC), no injury events (KTC), and unexpected events (KTD). The patient identification variables taken from the primary data were conducted using two labels at the time of identifying the patient i.e., full name and date of birth or medical record number and always verifying before carrying out any medical action/procedure both verbally (inquire directly to the patient) or visually (see the patient's bracelet and then compared to the medical record number). Effective communication variables that emphasis on reporting the critical value of the laboratory is taken from the secondary data in the hospital, i.e., data on reporting the quality part of each month. Measured timely reporting of critical laboratory values until reported to DPJP. The critical value of the laboratory reported with interval at 15 minutes is reported, the critical value of the lab reported > of 15 minutes means late reported. The quality variables of hospital service are obtained from primary data with four dimensions of service quality. First tangible assessed from the availability of inpatient rooms, complete enough medical equipment owned by the hospital, wheelchair/trolley facilities to carry patients, Doctors' and nurses' appearance, cutleries, and drinking utensils. Second, reliability was assessed from the Doctor who came on time, the Nurse's dexterity during the action, the meticulousness of nurses in reporting any changes that happen on patients. Third, responsiveness was assessed from doctors and nurses who were prompt to respond to patient complaints, and nurses provided clear information, doctors who gave time to the patient inquiries. Fourth, assurance was assessed from the availability of specialist physicians, doctors' behavior, educated nurses, and capable of serving the patients. Tendencies from respondents' answers to each variable were obtain based on the average scores (index), that is classified into a range of score based on the calculation of the three-box method.

3. RESULT AND DISCUSSIONS

A. Respondent Characteristics

In this study, we use the data samples around 165 respondents which is consist of more female respondents (120 respondents, 73%) and 45 Male respondents (27%). Young respondents were 100 respondents (61%) more than the adult respondents (61 respondents or 37%). The analysis shows that most respondents have Nurse education background (84 respondents or 51%) compared to other educational backgrounds of diploma 73 respondents or 44% from distribution respondent (see Table I).

Table I. Distribution Respondents Characteristic.

No	Respondent Characteristics	Frequency	%
1	**Gender**		
	Male	45	27
	Female	120	73
	Total	165	100
2	**Age**		
	17 to 25	100	61
	26 to 34	61	37
	35 to 43	4	2
	Total	165	100
3	**Educational Background**		
	Diploma	73	44
	Bachelor Degree	8	5
	Nurse	84	51
	Total	165	100

B. Patient Identification

The average value for the distribution of respondents based on patient identification variables in X hospital, Tangerang in 2019, is 159,5, categorized in the high category. This figure informs that the patient identification process is assessed based on the perspective of the Nurse categorizes very good, showing an understanding of the patient's identification as an outstanding safety goal. A total of 6.7% of nurses have

not understood that they should not use the patient's room number for patient identification under Joint Commission International, 2015.

C. Hospital Service Quality

The average distribution value of respondents based on the quality variables of hospital service in hospital X, Tangerang in 2019, is 141.43, classified in the high category. This value indicates that, in general, hospital X has already implemented hospital services quality, showing that the nurse has been able and has been conducting education and nursing care sufficiently. However, hospital facilities such as wheelchairs/Trolley that are available to carry the patient to the inpatient room is still lacking, can be seen in the quality tangible indicator, showing a result of 124.6 categorized in high category.

D. Hypothesis Analysis

a) The impact of patient identification on hospital service quality

Test results using double linear regression data analysis shows that the first hypothesis on patient identification variables significantly affects the quality of hospital services X, Tangerang is acceptable. Identification of the patient has a positive influence on the quality of hospital services means a high number of errors because of patient identification indicates low-quality hospital service. (See Table II).

Table II. Patient identification and effective communication coefficient to Hospital service quality

Model	Non-Standard Coefficient		Standard Coefficient	t	sig
	B	Std Error	Beta		
(Constant)	1.317	.489		2.692	.008
IP	.617	.090	.475	6.861	.000
KE	-.005	.125	-.003	-.039	.969

b) The Impact of effective communication on the quality of hospital services.

Double linear regression data analysis shows that the second hypothesis on effective communication variables does not have any effect on the quality of hospital services X, Tangerang. Effective communication focused on reporting the critical value of laboratories based on 9.6% of the reported late, and hospital service quality is still considered as good. Hospitals should have a definite flow to report on the critical value of the laboratory, which includes the time and reporting methods, recipients who are accountable for the reports, the range of values to be reported as appropriate and critical documentation.

c) Effect of patient identification on patient safety.

An Analysis using multinomial logistic data regression for the third hypothesis on the patient's identifying variables is acceptable, indicating it has a significant influence on patient safety at hospital X. Patient identification has an absolute effect on the safety of patients in unexpected events (KTD), i.e., any patient who is being observed or treated for should wear a patient wristband containing full name and date of birth.

d) Impact of effective communication on patient safety.

Test result using the multinomial regression logistics analytics shows that the fourth hypothesis on effective communication variables do not have any effect on the patient safety (hypothesis is rejected), where the sig value < 0.05:0,000 < 0.05 (see Table III).

Table III. Patient identification model, effective communication on patient safety

Effect	Model Fit Criteria	Likelihood Ratio Test			SPSS Data Result
	-2 Log Less likelihood model	Chi-Square	df	Sig	
Intercept	39.553[a]	.000	0	.	
IP	57.918	18.366	24	.785	H2: Accepted
KE	60.698	21.145	2	.000	H3: Rejected

Effective communication focused on reporting of critical laboratory values based on secondary data has 165 cases (9.6%) of reported late critical values. Late critical values are reported when time reporting is reached exceeds 15 minutes DPJP. Effective communication focused on reporting the critical value of the laboratory has no influence on the safety of the patient when the follow-up is not immediately performed according to DPJP instruction. KTD patient safety can happen when the reported critical value is not immediately followed. This situation has happened due to most of the patients X Hospital is a participant BPJS (Social Security Agency). The follow-up requires more extended time than private patients, as BPJS Patients must undergo multiple procedures to be verified before receiving treatment (according to hospital and BPJS Regulation). The patient's immediate action is delayed due to the patient's guarantee. In this case, effective communication becomes ineffective, because, despite the 15-minute reporting time, the action cannot be done immediately. It is, therefore, said that effective communication does not affect the safety of patients. Effective communication affects the safety of patients in uninjured events (KTC) at the critical value of the reported laboratory.

e) Influence of quality hospital service to patient safety.

The Result of Regression multinomial logistics data analytics shows that the fifth hypothesis of hospital service quality variables affect the safety of patients received. The quality of hospital services affects the patient's safety in the incidence of unexpected incidence (KTD) at tangible, where facilities and hospital equipment influence patient safety, at responsiveness, where Competence and readiness of doctors and nurses in serving patients will affect the safety of patients. The quality of hospital services has a positive influence on the safety of patients, and if the quality of hospital service is higher, then patient safety will increase (see Table IV).

Table IV. Partial Test Quality Service towards Patient Safety

Effect	Model Fit Criteria	Likelihood Ratio Test			SPSS Data Result
	-2 Log Less likelihood model	Chi-Square	df	Sig	
Intercept	74.814[a]	.000	0	.	
MP	152.006	77.192	68	.208	H4: Accepted

Thus, the calculation result from each hypothesis is captured on Figure 2.

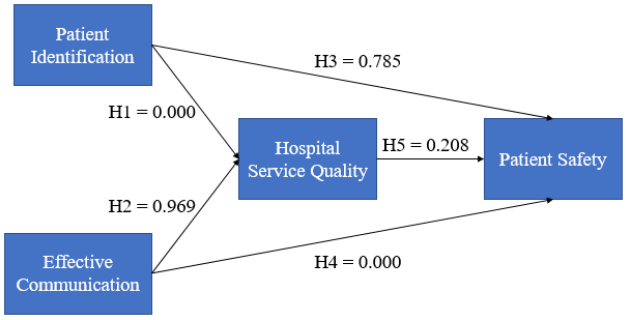

Figure 2. Correlation result from each hypothesis

E. Research Limitation

Thus, in this study it has been done and implemented following scientific procedures, but it still has the limitation as follows:

a) Not all data variables in research are based on primary data. Some of them are secondary data, e.g., patient safety variables (monthly incident Report of KTD, KTC, KNC) and effective communication variable (laboratory critical value reporting).
b) There are restrictions in the collection of primary data, such as the given time by the researcher for the nurse to fill in this questionnaire is limited; consequently, the respondents were rushed when filling the questionnaire
c) Limitation of research in retrieving secondary data, which is data only from April to July 2019.
d) The effective communication researched focuses solely on reporting the critical values of the laboratory; others such as hand over, read back have not been studied.

4. CONCLUSIONS

This study was successfully analyzed with several points of result. First, Patient identification influence hospital services quality, meaning that the high number of patient identification errors indicates a low quality of service, and vice versa, the low number of patient identification errors shows the high quality of hospital service. Second, Effective communication (which focuses on reporting the critical value of the laboratory) does not affect the quality of the hospital's ministry. It means there is a critical value of the laboratory that is late reported, the quality of hospital services is still considered good. Third, Patients' identification has a significant effect on patient safety. The patient identification process should be done from the moment the patient is hospitalized. The identity will always be confirmed in any following process in the hospital, such as the moment before giving medication, blood, or blood products. Forth, An effective communication (which focuses on reporting critical value of the laboratory) does not affect patient safety. The KTD patient safety incident may occur when the reported critical value is not promptly followed. Sixth, the quality of hospital service affects the safety of patients, namely in the unexpected event (KTD), on the indicator tangible and reliability. Where the high quality of service will increase the Patient Safety, and contrary, a low-quality service will decrease patient safety.

From the analysis and results, we also try to present some feedback or suggestions such as the nurse must not identify the patient using the patient's location/room number anymore because, at any time, the patient may be transferred to another room; Hospitals need to provide adequate wheelchairs /Trolly in the ER/poly/inpatient room especially for geriatric patients, disability, unconscious or limb patients, to facilitate the transfer of patients and improve the service; The presence of doctors on time in the service in the outpatient (poly)/hospitalization (visited)/emergency unit needs to be monitored by each person in charge of the room because it relates to the examination, actions, and safety of patients. Lateness based on Hospital's Standard Operation Procedure varies in each room (in outpatients if the doctor comes in 30 minutes from the time specified, in hospitalized if the doctor came in from 60 minutes, in emergency unit if the doctor came in from 5 minutes for triage I and 2 and 30 minutes to triage 3); The doctor is obliged to provide time and the opportunity for the patient to ask so that it can develop good cooperation and maximum service; It is required to re-socialize the SOP (standard operational procedure) on effective communication focused on reporting the critical value of the laboratory. In this study, not all indicators of patient safety can be measured due to data and time limitations. Therefore, it becomes a consideration for other

researchers to conduct it, such as measuring the workload and the imbalanced number of human resources, knowledge, and awareness of staff on the safety culture of patients, HR competence, facilities in hospitals, occupational stress, and working climate in hospitals as follows: First, For the subsequent studies, it is advised to research how people are more willing to maintain their health so that they do not require any medication from the hospital. Second, A bit of advice to the Government that Promotion and preventive programs such as GERMAS (Healthy Living Society Movement) to be more prioritized and encouraged compared to curative and rehabilitative programs, which can be implemented through a local administrator (RT/RW or health cadres). With the increasing public awareness to behave healthily, hopefully, the number of BPJS participants that are ill can be declined, so that health service financing can be allocated to promotive and preventive programs. Optimization of promotive and preventive programs is also an effort to improve quality control and cost control and done to maintain the quality of health services for the participants of BPJS. After hypothesized testing and the development of theoretical implications, the next step is to develop a managerial policy that is expected to provide theoretical contributions to management practices. Several managerial implications that can be developed are as follows: First, Socialization is carried out on new employees, given the general orientation introduction training about the material related to the quality of hospital services and patient safety. In contrast, for the senior employees, resocialization is required for all employees periodically regarding material related to the hospital services quality and patients' safety. Second, Socialization of SOP (Standard Operational Procedure) on patient identification to advance the staff's understanding and compliance in performing patient identification process under SOP (using full name and date of birth/medical record number and always conducting verification before conducting medical action/procedure). Doctors, nurses, medical support must not any longer conduct patient identification using the patient's room number because it is likely that a fatal error would happen to patient safety. Third, the hospital provides applications for instructions on implementing IPSG (International Patient Safety Goals) in each hospital computer to be accessible by all employees. Fourth, the nurse IPSG Audit every month by the head nurse of each room (outpatient, hospitalization, emergency unit) and the results of the Audit is analyzed. Audits include observations of the actions performed daily by nurses and testing the knowledge of nurses using questions. Fifth, an old/senior nurse will accompany new nurses as a mentor for approximately the first three months. Sixth, it is essential to pay attention to the workloads of nurses and other medical support staff. The lack number of nurses and medical support staff will affect the patient identification process and other service processes in the hospital. Seventh, it is required to review practical communication guidelines in laboratory critical value reporting, and there must be clarity of laboratory critical value reporting. Eighth, Administrative officers must actively follow-up for patients with care assurance problems

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