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The Effect of *Safety Leadership* to The Incident *Medication Error* in IFRS X Bintaro Through Officer Compliance Implements Standard Operations Procedure

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ABSTRAK

Medication error is an unintentional error prescribing, transcribing, dispensing, administration or monitoring under the control of a pharmacist. A safe madication system needs to be developed and maintained to ensure that patients receive good drug care. This influence that can reduce the incidence *medication errors* at the X Bintaro Hospital Pharmacy Installation. The sample in this study were 30 staff working at the Pharmacy Installation. The research instrument used a questionnaire and was measured using a Likert scale. Research results: found that there was no significant negative effect on the knowledge of officers on the incident *medication errors* (tcount<ttable (0.558<2.045) and significance (pvalue) 0.582>0.05) in the Pharmacy Installation of X Bintaro Hospital. Implications and Suggestions: The need for education not to be afraid to report (*blame culture*), the need to monitor and evaluate the achievement of pharmaceutical quality indicators, and the need to directly improve the service system to be more efficient and effective in order to be able to improve the quality of pharmaceutical services that focus on occupational and patient safety.

Kata Kunci: *Safety Leadership, Knowledge, Compliance, Medication Error*

INTRODUCTION

Medication errors generally occurs in health system management which is defined as un un intentional error in writing a prescription (prescribing), prescription reading (transcribing), recipe preparation (dispensing), administration) administration or drug monitoring (monitoring) under the control of a pharmacist. Medication errors is a risk factor that causes dangerous side effect. A safe medication system needs to be developed and maintained to ensure that patients receive good medication services. This is due to the increasing variety of drugs and the increasing number of drugs and types of drugs (Kunac et al., 2014).

Based on the PERSI National Map of Patient Safety Incidents Report (2007), errors in medication administration were ranked first (24.8%) of the top 10 reported incidents. If you look further, the process of using drugs includes: prescribing, transcribing, dispensing, and administering, dispensing was rankes first. Thus, patient safety is an important part of service risk hospital other than financial risk (financial risk), property risks (property risk), the risk of professional workers (professional risk) , as well as environmental risk (environment risk) services in risk management.

Hospital X Bintaro is a type C General hospital located in Bintaro - Tangerang Selatan (Banten Province), has medical service facilities and medical

support, one of which is the Pharmacy Installation. The Pahrmacy Installation is a functional implementation unit that carries out all pharmaceutical service activities in the hospital. Pharmacy Installation is an integrated part of patient health services in health facilities, is a health service unit consisting of: art, practice, and gathering of health professionals who work to select, prepare, store, dispensing drugs and medical devices, advising patients, doctors, nurses , and other health professionals about safe, effective and efficient ways of using medicines and medical devices. All pharmacy staff in their work must always continue to maintain and increase management treatment and pharmacy patient care to the highest standards in hospital environment (European Statements of Hospital Pharmacy, 2016)

In pharmaceutical services, of course there are problems and resources*medication errors* is multidisciplinary and multifactorial. It is rare that the actions of one individual are the cause *medication errors*, but rather a type of contributing factors that combine to become the cause of an incident. Errors can occur at several steps, from prescribing to the final dispensing of the drug to the patient. Common causes of medication errors include incorrect diagnosis, prescribing errors, errors in dosage calculations, poor drug distribution practices, problems with drugs and their devices, inappropriate drug administration, communication failures between health workers and lack of patient education (AMCP). Academic of Managed Care Pharmacy), 2019).

A Hospital Pharmacy Installation is a department or unit or part of a hospital under the leadership of a pharmacist (Ka. IFRS) and assisted by several pharmacists/pharmaceutical personnel who meet the requirements of applicable legislation and are responsible for all pharmaceutical work (Indonesian Ministry of Health, 2014, 2016). *Leadership* is one of the elements in the work safety management system and *safety leadership* is part of *leadership* it self. As a sub-system of organizational leadership, *safety leadership* provides a determination of the quality of the leadership of an organization. Conceptual *safety leadership*is helpful in explaining how and why good organizational safety performance should be achieved. *Safety leadership* can be defined as the process of interaction between leaders and their subordinates where leaders can mobilize their subordinates to achieve organizational safety targets through organizational factors or individual factors (Wu et al., 2008).

As an effort to suppress its occurrence *medication errors* higher level, pharmacists/ pharmacy staff are required to have and improve knowledge, skills and behaviors in order to be able to carry out direct interactions with patients. In this study the knowledge of pharmacists/ pharmacy workers can be linked based on the theory of Bloom et al (1956), stating that knowledge is the result of knowing, which occurs after humans perceive a certain object, where the knowledge in question is the pharmacist/staff knows, understands, can apply, be able to analyze, be able to synthesize, and evaluate all activities in accordance with pharmaceutical service standards which include providing information, monitoring use of medication to determine its final destination as expected and well documented to avoid medication errors in the Pharmacy Installation.

Someone who has good knowledge regarding the benefits and the importance of prioritizing safety and health at work will directly comply with the SPO (Standard Operating Procedure) that applies in his work unit. SPO or Standard Operating Procedures are formally written guidelines made by the organization for operational and technical components, aiming to increase the best productivity flow to achieve organizational expectations or goals, stimulate better employee performance and ensure all organizational units including IFRS comply with operational standards consistent for the purpose of officer compliance in providing pharmaceutical services (De Treville et al., 2005). Working according to the guidelines, namely SPO (Standard Operating Procedures) can prevent officers from having errors at work (medication errors). Compliance is when actions are carried out in accordance with regulations, Fitra et al (2022) in his research show that there is significant positive relationship between knowledge and positive attitude (compliance) with preventing medication errors. The better the knowledge and positive attitude of compliance possessed by officers can directly improve the prevention of medication errors in their work units.

Based on result observation to Completeness of prescriptions entered at the Pharmacy Installation at Hospital Based on the results of a preliminary survey and observations at the Pharmacy Installation at RS incorrectly affixing drug labels that are not supposed to be, and lack of safety risk management training from management resulting in a lack of knowledge of officers in working according to SPO (Standard Operational Procedures),

Evaluation of mediation error incidents that occurred at IFRS X Bintaro is a process or step to explore and find out, about the extent of implementation of SPO (Standard Operating Procedures), both from the perspective of officer compliance, results observation to officer knowledge and in terms of leadership as the person in charge of the department. With this evaluation the hospital can develop the quality of service quality by taking into

account the needs of the unit and the factors that influence events *medication errors* and the expected benefits are zero percent error. The problem discussed in this study is to analyze whether there is a relationship *safety leadership* and knowledge of events *medication Errors* with compliance by officers in implementing SPO (Standard Operational Procedures) as an intervening variable in IFRS X Bintaro.

Conceptual Framework and Hypothesis

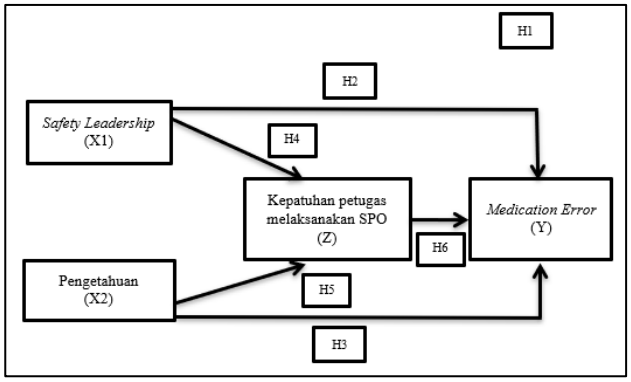

Figure 1. Research Conceptual Framework

The hypotheses in this research are as follows:

H1: There is a significant effect *safety leadership* and knowledge of events *medication errors* through officer compliance in implementing SPO (Standard Operational Procedures) at the X Bintaro Hospital Pharmacy Installation.

H2: There is a significant negative effect *safety Leadership* to events *medication errors* at the X Bintaro Hospital Pharmacy Installation.

H3: There is a negative influence knowledge of events *medication errors* at the X Bintaro Hospital Pharmacy Installation.

H4: There is a significant positive effect *safety Leadership* on officer compliance carry out SPO (Standard Operating Procedures) at the Pharmacy Installation of X Bintaro Hospital.

H5: There is a significant positive effect knowledge of officers' compliance with implementing SPO (Standard Operating Procedures) at the Pharmacy Installation of X Bintaro Hospital.

H6: There is a significant negative effect on compliance officers carry out SPO (Standard Operating Procedures) for incidents *medication errors* at the X Bintaro Hospital Pharmacy Installation.

RESEARCH METHODS

The research design uses a quantitative approach and the research design is *hypothetical deductive* namely causal design. Based on the research objectives, this research aims to identify factors related to the incidence of medication errors, as well as determine steps to improve the quality of the pharmacy at RS X Bintaro. The results of data processing will then be used as a basis for analysis and answering the proposed hypotheses. The analysis used in this study uses *Statistical Product of Social Sciences* (SPSS) with *Path Analysis*. In this study the number of question indicator items was 90 items used to measure 4 variables, and the number of samples used in this study was a saturated sample of 30 respondents, with the inclusion criteria the respondents were all officers working in the Hospital Pharmacy Installation. X Bintaro.

RESULTS AND DISCUSSION

Respondent Characteristics

Based on the demographic data of respondents from 30 people who were studied based on age, respondents aged between 20-25 years and 26-30 years dominated in this study, 14 people each (46.67%), while the smallest number of respondents aged> 30 years was 2 people (6.67%). Next are characteristics Based on gender, the majority were women, 25 people (83.33%), while the smallest number were men, 5 people (16.67%). Based on the level of education, most of them had a bachelor's degree as many as 12 people (40.00%), while the smallest number had a bachelor's degree as much as 1 person (3.33%). Based on old work, most have been working for 1-3 years as many as 13 people (43.33%), while the smallest number had worked <1 year as many as 5 people (16.67%) and based on employment status in the hospital, all respondents had status permanent employees of 30 people (100.00%).

Data analysis

1) Validity Test

In this research, the validity test will use correlation*Pearson Products Moments*. A question item is said to be valid if the rcount > rtable value, if the rcount value < rtable, then it can be concluded that the question item is invalid and must be excluded. Mean while, to look at the rtable value, you will look at the number of samples (N = 30), which is 0.361 with a significance level of 5% (Ghozali, 2016). The results of the variable validity test in this study have a value of rcount > rtable, where the smallest value of rcount in this study is 0.432 which is the value of question P7 on the variable compliance of officers carrying out SPO (Standard Operating Procedures) "I realize that it is important to review prescriptions as an initial screening to avoid happening*medication errors*"

but still bigger than the rtable. So that it can be stated that the entire series of questionnaires in this study is valid to serve as a research instrument or meets the requirements for calculating the validity test.

2) Reliability Test

A questionnaire is said to be reliable or reliable if a person's answers to statements are consistent or stable over time. The reliability of a test refers to the degree of stability, consistency, predictive power, and accuracy. Measurements that have high reliability are measurements that can produce reliable data. In general, reliability is considered satisfactory if it is ≥ 0.700. Testing the reliability of the instrument uses the Alpha Cronbach formula because this research instrument is in the form of a questionnaire and a multilevel scale.

Based on the reliability test results in Table 1, it can be seen that all variables obtained a Cronbach alpha reliability coefficient value of >0.700. so it can be stated that the variables in the research can be declared reliable.

Table 1. Reliability Test

Variable	*Cronbach Alpha*	Mark Critical	Conclusion
Medication Error (Y)	0.926	0.700	Reliable
Officer Compliance in implementing SPO (Z)	0.935	0.700	Reliable
Officer Knowledge(X_2)	0.927	0.700	Reliable
Safety Leadership (X_1)	0.962	0.700	Reliable

Classic Assumption Test

1) Normality Test

The normality test aims to test whether in a regression model, the confounding or residual variables have a normal distribution or not. As it is known that the residual values follow the normal distribution. If this assumption is violated then the statistical test becomes invalid for small sample sizes. According to (Ghozali, 2016) statistical tests with Kolmogorov Smirnov take the basis for decision making, namely if the value is asymp. sig. (2-tailed) is greater than 0.05 then Ho is accepted. This means that the residual data is normally distributed. Based on the results of data processing, the results of the normality test with the Kolmogorov Smirnov test are obtained, as follows:

Table 2. Normality Test

Test Statistic	*Asymp. Sig. (2-tailed)*
0.128	0.200

Based on Table 2, the results of the normality test were obtained with the Kolmogorov Smirnov test which obtained a significance value (*asymp. sig. (2-tailed*)) of 0.200> 0.05, it can be stated that the data in this study are normally distributed.

2) Multicollinearity Test

According to (Ghozali, Multicollinearity aims to test whether the regression model finds a correlation between independent variables. Basis for decision making on the multicollinearity test, If the tolerance value is > 0.10 and the VIF value is < 10, then it means that it is said to be free of multicollinearity and if the tolerance value is < 0.10 and the VIF value is > 10, then multicollinearity is said to have occurred. Based on the calculation results in Table 3, the results obtained were tolerance values > 0.10 and VIF values < 10, so it can be stated that the data in this study are free from multicollinearity problems.

Table 3. UMulticollinearity Test

Coefficients[a]			
Model		**Collinearity Statistics**	
		Tolerance	**VIF**
1	Safety Leadership	.479	2.089
	Officer Knowledge	.395	2.534
	Officer Compliance	.261	3.831
a. Dependent Variable: Medication Error			

3) Heteroscedasticity Test

This heteroscedasticity test is carried out to test whether or not there is an inequality of variance from the residuals of one observation to another observation. If there is a certain pattern, such as the dots that form a certain pattern that is regular (wavy, widens and then narrows), then heteroscedasticity occurs. If there is no clear pattern, and the points spread above and below the number 0 on the Y axis, then heteroscedasticity does not occur. Based on the results of the heteroscedasticity graph in Figure 2, it can be seen that there is no clear pattern, and the points are spread out randomly randomly above and below the number 0 (zero) on the Y axis, so it can be said no there is problem heteroscedasticity on this research.

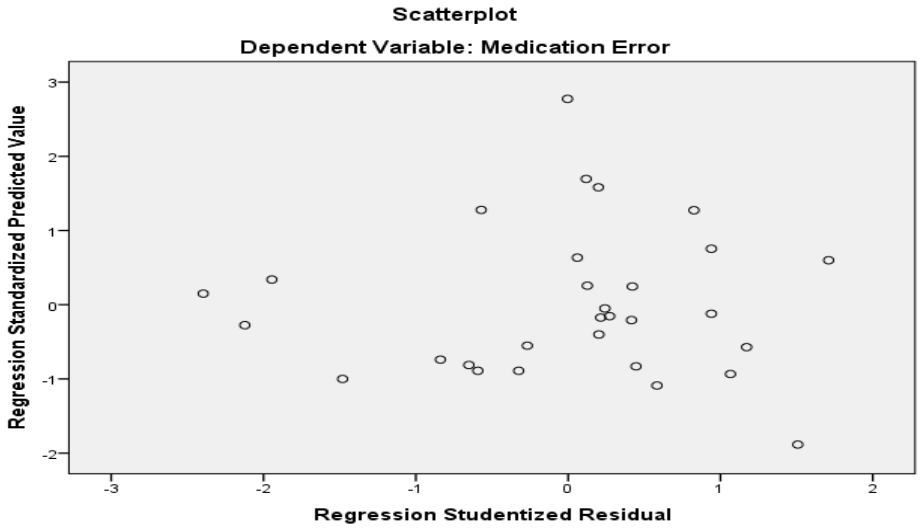

Figure 2. Heteroscedasticity Scatterplot Graph

Path Analysis

Statistical analysis of the data in this study used the path analysis method which is an extension of multiple linear regression analysis. The two equation models used simple regression analysis and multiple regression was performed to determine the strength of the relationship between the independent variable and the intervening variable and also the strength of the relationship between the independent variable and the dependent variable. The results of this path analysis are based on the output results of the two regressions to obtain the beta coefficient and find a direct and indirect relationship, in full, the following results are obtained:

1) Structural Path Coefficient

Path coefficient 1, tests the influence of variables *independent safety leadership* and knowledge of variables *intervene* officer compliance in carrying out the SPO. Based on the calculation results, the results of the path equation and hypothesis testing in model I are obtained, namely as follows:

$$Z = Pzx_1 + Pzx_2 + e_1$$

$$\mathbf{Z = 0.433X_1 + 0.551X_2 + e_1}$$

Meanwhile, based on the results of the coefficient of determination, the rsquare results show 0.739 or 73.9%, this shows that 73.9% of the contribution of the variable influence *independent safety leadership* and knowledge of the intervening variable of officer compliance in implementing the SPO, while the remaining 26.1% is a contribution to the influence of other variables not examined in this study.

2) Structural Path Coefficient II

Path coefficient 2, tests the influence of the independent variable *safety leadership* and knowledge and intervening variables of officer compliance in implementing SOP on the dependent variable medication error, the following results are obtained:

$$\mathbf{Y = Pyx_1 + Pyx_2 + Pyz + e_2}$$

$$\mathbf{Y = (-0.651)X_1 + 0.138X_2 + 0.757Z + e_2}$$

Based on the results of the coefficient of determination shown in the rsquare results of 0.375 or 35.7%, this shows that 35.7% contributes to the influence of the variable *independent safety leadership* and knowledge and intervening variables of officer compliance in implementing the SPO on the dependent variable *medication errors*, while the remaining 64.3% is the contribution of the influence of other variables not examined in this study.

Based on the results of the recapitulation of the test, the results of the path analysis for each variable are obtained, which can be described as follows:

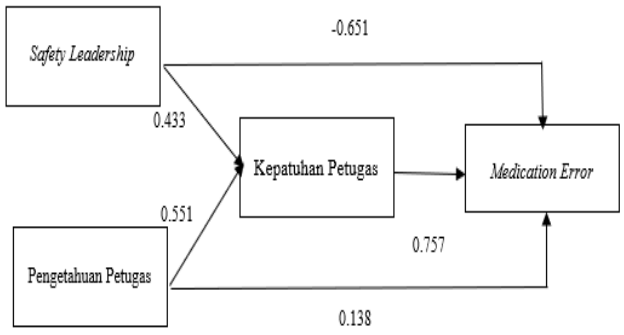

Figure 3. Path Analysis Model

Hypothesis Testing

Hypothesis testing is statistical proof of all that has been hypothesized in this study based on theory. To test the hypotheses that have been proposed and to detect the influence of the mediating (intervening) variable in mediating the effect of the independent

variable on the dependent variable, path analysis is used (*path analysis*). Following are the results of testing the direct effect hypothesis (*direct effect*) between variables, using the t test (Table 4), the following results were obtained:

Table 4. Hypothesis Testing *Direct Effect* (Uji t)

Struktur Path	Koefesien Jalur	Nilai t-hitung	Nilai t-tabel	P-*values*	Hasil
Safety leadership -> Kepatuhan Petugas Melaksanakan SPO	0.433	3.758	2.045	0.001	Diterima
Pengetahuan Petugas-> Kepatuhan Petugas Melaksanakan SPO	0.551	4.785	2.045	0.000	Diterima
Safety leadership -> Kejadian *medication error*	-0.651	-2.906	2.045	0.007	Diterima
Pengetahuan Petugas -> Kejadian *medication error*	0.138	0.558	2.045	0.582	Ditolak
Kepatuhan Petugas Melaksanakan SPO -> Kejadian *medication error*	0.757	2.497	2.045	0.019	Diterima

Based on Table 4. Shows the results of testing the direct influence hypothesis (*direct effect*) between variables using the t test showed that there was no significant negative effect on the knowledge of officers on the incident *medication errors*at the X Bintaro Hospital Pharmacy Installation.

Table 5. Hypothesis Testing *Indirect Effect* (Sobel)

Struktur Path	Sobel Test Statistik	Nilai t-tabel	P-*values*	Hasil
Safety leadership -> Officer Compliance Implement SPO -> *Medication Error*	2.074	2.045	0.019	Accepted
Officer Knowledge -> Officer Compliance Implement SPO -> *Medication Error*	2.210	2.045	0.013	Accepted

1. Influence*Safety Leadership*and Knowledge of Events*Medication Error*through Officer Compliance Implementing SPO (Standard Operating Procedures)

Based on the results of testing the hypothesis with the Sobel test (mediation), the results obtained are tcount> ttable (2.045) and a significance (pvalue) of (<0.05), then Ho is rejected and Ha is accepted. From the test results, it can be stated that there is an influence *safety leadership* and knowledge of events *medication errors* through the compliance of officers implementing SPO (Standard Operating Procedures). These results indicate that compliance is a significant intervening variable can mediate the influence of the independent variable safety leadership on the dependent variable the incidence of medication errors.

Incident *medication errors* what happened at IFRS X Bintaro shows that there are still reports of incidents *medication errors* which cover: *double check* carried out by the same officer before handing over the prescription, ignorance of the officer if there is a new type of drug that has not been socialized, causing errors in reading prescription instructions (for example: amlodipine 5 mg and amlodipine 10 mg), lack of compliance with regulatory authorities due to the absence of environmental demands work (management and direct superiors) on the achievement of performance indicators for officers, causing a lack of desire for respondents to be willing to wholeheartedly meet hospital expectations, where all services expect zero cases *medication errors*, the head of the pharmaceutical installation that is considered by subordinates rarely has time to be able to do it *briefing* before starting service or during shift changes. *briefings* is an activity carried out by superiors to provide brief explanations or meetings to provide brief information, with frequent briefings by superiors it is hoped that leaders can directly remind subordinates about the values of work that always prioritize patient safety, there are still instructions that unclear in the eprescription which can cause the potential for errors to occur is still high. Apart from that, it is not uncommon for some doctors to still write e-prescriptions, often they still have to confirm the preparation of syrup or tablets which are often interchangeable and it is not uncommon for there to be shortages of medicines at the X Bintaro Hospital Pharmacy Installation which causes officers to still have to re-confirm regarding the availability of changing medicines.

In pharmaceutical services, of course there are problems and resources *medication errors* is multidisciplinary and multifactorial. It is rare that the actions of one individual are the cause *medication errors*, but rather one type of contributing factor that combines to cause an incident. Errors can occur at several steps, starting from dispensing the prescription to the final delivery of the drug to the patient. Common causes of medication errors include inappropriate diagnosis, errors prescribing, errors in calculating doses, poor drug distribution practices, problems related to drugs and their devices, inappropriate drug administration, communication failures between health workers and lack of patient education (AMCP (Academic of Managed Care Pharmacy), 2019). Conceptual *safety leadership* is helpful in explaining how and why good organizational safety performance should be achieved.*Safety leadership* can is defined as the process of interaction between leaders and their subordinates where leaders can mobilize their subordinates to achieve organizational safety targets through

organizational factors or individual factors (Wu et al., 2008).

Based on the research of Kim et al (2020) states that leadership is significantly correlated with the perceived benefits of using the system (r ¼.17, p ¼.032) and the climate of medication error management (r ¼.55, p <.001). The perceived benefits of using a medication safety system are a mediator between transformational leadership and a medication error management climate. When chief executive officers build and implement a medication safety system in their hospital, transformational leadership can enhance the perceived benefits of using the system, which is an important factor contributing to a positive medication error management climate.

An effective SPO (Standard Operating Procedure) provides the basic structure for building strong quality assurance. The framework, embedded in the quality management system that defines SPO (Standard Operating Procedures) as work rules or guidelines in controlling quality. Obedience is a form of social influence, and individual actions or behavior which are reactions and direct orders from other individuals as a sign of authority. Compliance is when actions are carried out in accordance with regulations, where regulations in pharmaceutical services are compliance with SPO (Standard Operating Procedures). SPO (Standard Operating Procedure) is used as a standard work tool that can be used to describe daily activities and quality system service management procedures. Pagala et al (2017) in their research results showed a lack of nurse compliance in implementing Standard Operating Procedures the risk of an accident incident was 60.4%. Another study conducted by Siti Syarifah also showed that the higher the level of nurse compliance in giving medication, the higher the quality of service, especially nursing in maintaining patient safety from medication errors, Fitra et al (2022) in their research showed that there was a significant positive relationship between knowledge and a positive attitude (compliance) with prevention *medication errors*. The better knowledge and positive attitude of compliance that officers have can directly increase prevention of occurrence *medication errors* in the work unit.

2. Influence *Safety Leadership* to Officer Compliance Implementing SPO (Standard Operating Procedures)

The results of testing the hypothesis with the t test, the results obtained are tcount> ttable (3.758> 2.045) and a significance (pvalue) of 0.001 (0.000<0.05), then Ho is rejected and Ha is accepted. From the results of testing the hypothesis, it proves that the better the leadership's expertise in fulfilling the goal of fostering a work safety culture, the more it will increase the compliance of pharmaceutical officers at the X Bintaro Hospital Pharmacy Installation. The framework, embedded in the quality management system that defines SPO (Standard Operating Procedures) as work rules or guidelines in controlling quality. SPO (Standard Operational Procedures) contains formal written guidelines for operational and technical components. FEMA (Federal Emergency Management Agency) (1999) states, that SPO (Standard Operating Procedures) is very important to address the various laws and regulations that departments must follow to ensure safe work practices. Among other benefits, documenting laws and regulations in SPOs (Standard Operating Procedures) helps organizations stay compliant. Compliance is a form of social influence, and individual actions or behavior which are direct reactions and orders from other individuals as a sign of authority (Niven, 2013). Compliance is when actions are carried out in accordance with regulations, where regulations in pharmaceutical services are compliance with SPO (Standard Operating Procedures). SPO (Standard Procedure Operational) is used as a standard work tool that can be used to describe daily activities and a quality system of service management procedures.

The leader as the highest authority holder has direct influence to be able to influence his subordinates to work voluntarily or work according to the rules in order to achieve organizational goals, one of which is in working according to standards where these standards have been poured into the SPO (Standard Operating Procedures) as work guidelines. *Safety leadership* as a sub system of organizational leadership, *safety leadership* provides a determination of the quality of an organization's leadership. *Safety leadership* leadership that has outstanding work safety performance. The success of occupational safety and health management depends on the ability of the safety leadership of managers, as they determine the level of implementation of safety rules and procedures that must be followed in the field in this research service in pharmaceutical installations.

Officer compliance in implementing SPO (Standard Operational Procedures) at IFRS The

lack of demands from the work environment (management and direct superiors) on the achievement of officer performance indicators results in a lack of respondents' desire to be willing to wholeheartedly fulfill the hospital's expectations, where all services expect zero cases of medication errors. The absence of an assessment or evaluation of the achievement of indicators and officer performance based on the leadership's assessment is one of the causes of the lack of compliance by officers in working according to SPO (Standard Operational Procedures).

Zhao et al (2022) in their research stated that *safety leadership* have a positive impact On *safety climate* And *safety participation*. Employee perceptions of climate and work safety conditions in the company formed as a result of the role of safety leadership are significantly related to suppressing the occurrence of medication errors in work units due to the high perception and understanding of employees to always work by prioritizing work safety with reference to SPO (Standard Operating Procedure) policies. work unit. Another study conducted by Hertig et al (2016) recommended that medication safety leaders take on a member role integrated teams rather than a single point of contact. Successful medication safety programs must adopt new approaches that embrace the skills of all members of the health care team and position multiple drug safety leaders to improve safety.

3. The Effect of Knowledge on Officer Compliance in implementing SPO (Standard Operating Procedures)

Based on the results of hypothesis testing with the t test, the results obtained were tcount>ttable (4.785>2.045) and a significance (pvalue) of 0.001 (0.000<0.05), so Ho was rejected and Ha was accepted. From the results of testing this hypothesis, it is proven that the higher the knowledge of the pharmacy staff, the greater the compliance of the pharmacy staff at the Hospital X Bintaro Pharmacy Installation.

The knowledge possessed by the pharmacy staff at RS X Bintaro is considered good, but it is not uncommon for e-prescriptions to have unclear instructions which can lead to a high potential for errors to occur. Apart from that, it is not uncommon for several doctors to write eprescriptions, they often have to be confirmed regarding syrup or tablet preparations, which are often mixed up. Apart from that, it is not uncommon for drug vacancies to occur in the Pharmacy Installation of X Bintaro Hospital, which causes officers to re-confirm regarding the availability of drug changes. So that if a prescription comes in during a busy visit, it can cause the potential for it to happen *medication Errors* due to lack of accuracy by officers when initial screening of incoming prescriptions. Knowledge of staff to know, understand, be able to apply, be able to analyze, be able to synthesize, and evaluate all pharmaceutical service activities in accordance with pharmaceutical service standards which include providing information, monitoring drug use to find out the final destination as expected and well documented in order to avoid medication errors in Pharmaceutical Installations is very much needed. Someone who has good knowledge regarding the benefits and the importance of prioritizing work safety and health will directly comply with work in accordance with the SPO (Standard Operating Procedure) that applies in his work unit because he knows that by working following the guidelines, namely SPO (Standard Operating Procedure) can prevent himself from incidents of errors at work (medication errors). Compliant is when actions are carried out in accordance with regulations, Fitra et al (2022) in their research shows that there is a significant positive relationship between knowledge and positive attitudes (obedience) and preventing medication errors. The better knowledge and positive attitude of compliance that officers have can directly increase the prevention of incidents *medication errors* in the work unit.

Education is needed to obtain information, for example things that support health, so that it can improve a person's quality of life. Apart from that, education is the main factor that plays a role in increasing a person's information and knowledge and in general the higher a person's education, the easier it is to receive information (Notoadmodjo, 2003). Therefore, the level of education is often used as a qualification or prerequisite and is used as a perspective in distinguishing a person's level of knowledge (Yulaelawati, 2008). Education is a conscious and planned effort to create a learning atmosphere and learning process. Dimyanti and Mudjiono (2009) stated that education can improve a person's abilities in the cognitive, affective and psychomotor domains. The cognitive domain includes knowledge, understanding, can apply, perform analysis, synthesis, and evaluate. The affective domain includes accepting, participating, determining attitudes, organizing, and forming lifestyles. The psychomotor domain consists of the ability to perceive, prepare oneself, and make movements.

The level of education will affect a person at work. A high level of education is assumed to have broad knowledge and insight so that it has good skills and abilities in carrying out work (Natasia & Kurniawati, 2016). The level of education will influence a person's work. A high level of education is assumed to have broad knowledge and insight so that it has good skills and abilities in carrying out work (Natasia & Kurniawati, 2016). The level of education will affect a person at work. A high level of education is assumed to have broad knowledge and insight so that it has good skills and abilities in carrying out work (Natasia & Kurniawati, 2016).

4. Influence *Safety Leadership* to Incident *Medication Error*

Based on the results of testing the hypothesis with the t test, the results obtained are tcount>ttable (-2.906>2.045) and a significance (pvalue) of 0.007 (0.007<0.05), then Ho is rejected and Ha is accepted. From the results of testing the hypothesis, it proves that the better the leadership's expertise to meet the goal of cultivating a work safety culture in the work unit, the lower the incidence of *medication errors* at the X Bintaro Hospital Pharmacy Installation.

The success of occupational safety and health management depends on ability *safety leadership* managers, as they determine the level of implementation *safety rules* and *procedures* that must be followed in the field. In this study, services at the Pharmacy Installation, *safety Leadership* make organizational safety expectations clear, financially support safety, be present when major safety issues are decided, be positive and support others' safety efforts, create and enforce a safe, healthy, and caring corporate culture. Common causes of medication errors include incorrect diagnosis, prescribing errors, errors in dosage calculations, poor drug distribution practices, problems with drugs and their devices, inappropriate drug administration, communication failures between health workers and lack of patient education (AMCP). Academic of Managed Care Pharmacy), 2019).

Hospital patient safety is a system where hospitals make patient care safer, which includes risk assessment, identification and management of matters related to patient risk, reporting and analysis of incidents, the ability to learn from incidents and their follow-up and implementation of solutions to minimize risks. The system is expected to prevent injuries caused by errors due to carrying out an action or not taking the action that should be done. Safety is the main aspect of the health service system and is a guarantee for health system users. *World Health Organization through the World Alliance for Patient Safety*also stated the same thing, namely that safety is a basic component in the quality management of the health care system. Through a monitoring system (*surveillance system*, error reporting systems, and direct inspections) health service providers can identify and correct errors to ensure and improve the quality of health services.

Pharmacy staff have a very important role in patient safety related to treatment, seen from their relationship with other health workers in the treatment process. As part of a healthcare team that includes doctors, pharmacists and other healthcare providers, they must weigh the potential risks against the intended benefits of each treatment to minimize the possibility of harm or adverse events to the patient. Making mistakes is humane, but if it has a fatal impact and harms people Otherwise, even though it can be prevented, hospital management should take preventative measures as far as possible. Safety culture is a macroorganizational factor that can have a positive impact on work safety. It is important for the pharmacy community and leaders to be aware of the principles of safety culture. As the field of hospital safety has evolved, leadership has increasingly played a role in prioritizing safety through actions such as building a safety culture, responding to patient and staff concerns, supporting efforts to improve safety, and monitoring progress.

Role*safety leadership* At the Pharmacy Installation at Hospital IFRS is becoming less of a reminder and a giver of direction. *briefings* is an activity carried out by superiors to provide brief explanations or meetings to provide brief explanations, as is *Briefing* which is often done by superiors, it is hoped that leaders can directly remind subordinates about work values that always prioritize patient safety.

Safety leadership, is one strategy to improve safety culture that has been tested for patient safety. By using *patient safety leadership walkround*, leaders can demonstrate their commitment to a safety culture in the hospital. According to WHO*medication errors*and unsafe medication practices are the main causes of injury and avoidable harm in health care systems throughout the world and based on data from the PERSI national patient safety map report (2007), medication administration errors or*medication errors*ranks first in the top three of hospital medical incidents. On this basis, strategies are needed to improve patient safety culture, one of the strategies that has been tested and recommended is *patient safety leadership walk*

rounds or patient safety rounds through analysis of relationships *patient safety leadership walkround* to wards patient safety culture (Uzer & Permatasari, 2019).

5. The Influence of Officer Knowledge on Medication Error Occurrences

Based on the results of hypothesis testing with the t test, the results obtained were tcount<ttable (0.558<2.045) and a significance (pvalue) of 0.582 (0.582>0.05), so Ho was accepted and Ha was rejected. From the results of testing this hypothesis, it proves that the better the knowledge of pharmacy officers, the less likely they will be able to minimize incidents *medication errors* at the Hospital Pharmacy Installation. X Bintaro. Knowledge is an important factor in a person making decisions, but not always a person's knowledge can prevent him from unwanted events. For example, nurses who have a good level of knowledge do not always carry out patient safety procedures well because all the actions they take carry out the risk of errors. There are several factors that influence the occurrence of medication errors such as supervision and workload. Good motivation can implement a patient safety culture, especially by reducing medication errors. The results of other research show that there are large differences between developing countries and other countries in terms of knowledge, attitudes and behavior towards prevention *medication errors* due to cultural and organizational context. It is important to investigate how cultural background can influence the perception of medication errors to identify the most appropriate prevention strategies. Good practice is to communicate the strengths and weaknesses of similar or different systems to identify the most effective strategies for optimizing treatment management processes and patient safety, also in other countries (Giannetta et al., 2023; Thomas et al., 2019).

Alrabadi et al (2021) in their research showed clustering of events *medication errors* into contextual, modular, or mental (psychological) is considered an ideal protocol for assessing how errors occur. Contextual sequencing assesses time, place, treatment, and the specific individuals involved. Modular characterization analyzes the way errors occur (e.g., due to omission, repetition, or substitution). The results showed pharmacist errors, such as: wrong medication (25.0%), overdose (23.0%), wrong label (23%), wrong dose (21.8%), wrong strength (10.8%)), wrong quantity (6.9%), wrong route (2.3%), and dispensing (22%). In addition, 0.078 errors per patient, and 0.029 errors per treatment were mainly due to dosage errors, medication omissions, and incorrect frequency errors. Previous research shows that (94.0%) out of 430 errors were negligence and only 6.0% errors caused major problems. Impact on the patient's life but not considered a worrisome mistake. In addition, this may be related to an implementation deficit (36.7%) and a decrease in strategy realization, but knowledge, communication, drug distribution, and entry systems have a smaller percentage (Berdot et al., 2012). Sources of error can come from errors in ordering, prescribing, transcription, dispensing, and administration (ie when a patient is given the wrong drug). On the other hand, none of the tests showed a strong relationship between nurse quality (eg age, length of training, and education) and the number of medication errors.

One of the causal factors is that there is no significant negative effect on the knowledge of officers on the incidence of medication errors in this study because the knowledge of officers is categorized as having good enough knowledge of medication errors. M*edication errors* but it happened *medication errors* it's still there and happening. Possible causes include: fatigue, lack of concentration due to interruptions or diversions during the drug preparation process, lack of motivation to work based on SOP, workload, LASA drug management system that is not yet orderly, etc.

In each link of the chain there are several actions, each action has the potential to be a source of error. Every health worker in this chain contributes to errors (Cohen, 2007). Decisions on drug use always involve considerations between benefits and risks. The aim of reviewing each incoming prescription is to obtain clinical outcomes that can be accounted for in order to improve the patient's quality of life with minimal risk. Based on the PERSI National Map of Patient Safety Incidents Report (2007), errors in medication administration were ranked first (24.8%) of the top 10 reported incidents. If we look further, in the process of using drugs which includes prescribing, transcribing, dispensing and administering, dispensing is ranked first. Therefore, *financial risk*), property risks (*property risk*), the risk of professional workers (*professional risk*), nor environmental risk (*environment risk*) services in risk management. As an effort to suppress its occurrence *medication errors* higher, pharmacists/ pharmacy staff are required to have and improve knowledge, skills and behavior in order to carry

out direct interactions with patients. In this research, the knowledge of pharmacists/pharmacy officers can be linked based on the theory of Bloom et al (1956), which states that knowledge is the result of knowing, which occurs after humans perceive a certain object, where the knowledge in question is that the pharmacist/officer knows, understands, can apply, can analyze, synthesize and evaluate all pharmaceutical service activities in accordance with pharmaceutical service standards which include providing information, monitoring drug use to find out the final destination as expected and well documented to avoid incidents *medication errors* in the Pharmaceutical Installation. The knowledge of pharmaceutical personnel in this matter is concerning *medication errors* and drug administration, staff with good knowledge commit fewer medication errors and are better able to identify medication errors before they reach the patient. However, if the knowledge possessed by officers is not properly practiced, the truth values that should be carried out will not be carried out due to a lack of desire or motivation to meet organizational expectations. As in research conducted by Wulandari (2019) which states that there is no relationship between knowledge and management, management and medication errors, as well as length of work and knowledge.

There are differences between the author's research findings and the results of previous research, and these differences can be caused by several things such as different methods, sample populations, and measurement tools, which lead to different results, such as in research (Alsulami et al., 2019), where the sample used was 365 respondents. The results of the study study participants demonstrated an adequate knowledge base with respect to the reporting of medication errors. Although there is sufficient knowledge and a good attitude towards reporting medication errors. Good knowledge significantly affects the attitude of staff in reporting any medication errors.

Another study was conducted by (Fitra et al., 2022) with a sample of 170 respondents. The results of this study indicate that the better a person's knowledge, the less the incidence of medication errors. That way, nursing services will be better, and support appropriate patient recovery efforts. The smaller the sample used, the greater the critical limit and vice versa, in statistical testing, the better the number of samples, the better the results will be.

6. Effect on compliance officers carry out SPO (Standard Operating Procedures) for incidents *medication errors*

Based on the results of testing the hypothesis with the t test, the results obtained are tcount>ttable (2.497>2.045) and a significance (pvalue) of 0.019 (0.019<0.05), then Ho is rejected and Ha is accepted. From the results of these tests, it can be stated that there is a significant positive effect of staff compliance on the incidence of medication errors in the hospital.

Medication error is something that is incorrect, committed through ignorance or inadvertence, an error, for example in calculation, judgment, speaking, writing, action, etc. or failure to complete a planned action as intended, or improper use of an action plan to achieve specific goals (Aronson, 2009). An effective SPO (Standard Operating Procedure) provides the basic structure for building strong quality assurance. SPO (Standard Operational Procedures) must be used as a standard work tool that can be used to describe daily activities and a quality system of service management procedures. Although there are different approaches to drafting SPO (Standard Operating Procedures), if they are not written correctly, produce documents of limited value (EPA (Environmental Protection Agency), 2007). A well-structured SPO (Standard Operating Procedure) scope involves many health service facility units to ensure efficient and effective work. SPO (Standard Operating Procedures) as an operational framework for every organization, functions as the backbone that formalizes standards.

Compliance is obedience in carrying out certain recommended actions or reactions to something outside the subject. Steers & Porter (1987) conceptualize workplace compliance as a process of social influence, which individuals exert influence intensively on other individuals to build behavior and relationships within a group or organization. Non-compliance in drug administration is caused by several factors, namely interruptions, workload, knowledge, and communication of pharmacists. Distractions and interruptions by staff disrupt concentration and attention which can cause negligence and loss of focus on the patient (Keers et al., 2013). The carelessness of the care system for a service also has a major impact on officer compliance. Poor systems and inadequate monitoring cause officer compliance in implementing SPO (Standard Operational Procedures) to decrease. Policy system *double check* At the Pharmacy Installation at Hospital Obedient officers do

double checks, but because the service system is not well supervised, the potential for medication errors will still exist if the policy system is not changed or improved.

Research Findings

The findings of hypothesis testing in this study found that there was no significant negative effect on staff knowledge on the incidence of medication errors at the Pharmacy Installation of X Bintaro Hospital. For the value of the contribution of the effect of the independent variable safety leadership and knowledge on the intervening variable of compliance of officers implementing the SPO (Standard Operating Procedures) obtained an rsquare value of 0.739 or 73.9% and the contribution value of the influence of the independent variable safety leadership and knowledge and the intervening variable of compliance of officers implementing the SPO (Standard Procedure Operational) for the dependent variable medication error obtained an rsquare value of 0.375 or 37.5%, this shows that it is equal to 37.

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CONCLUSION, IMPLICATIONS, AND SUGGESTION

Conclusion

Results of hypothesis testing in research using the T Test, Sobel Test and R2 determination proves that based on the T test, it shows that there is no significant negative influence of staff knowledge on the incidence of medication errors at the Pharmacy Installation at X Bintaro Hospital. Based on the Sobel Test, it shows that there is an influence of safety leadership and knowledge on medication error incidents through officers' compliance with implementing SPO (standard operational procedures), meaning that officers' compliance with implementing SPO (standard operational procedures) is a variable that can mediate safety leadership and knowledge on medication error incidents

Implications

The results of this study have implications for providing information to the Pharmacy Installationof X Bintaro Hospital regarding the resulting medication errors. Hospitals need to improve supervision and provide supporting facilities so that health workers are willing to report any incidents of medication errors. Management needs to provide education to officers not to be afraid to report medication errors if they occur. The existence of a blame culture can directly make it difficult for management to decide on corrective steps. Training for health workers is also needed related to the attitude and behavior of health workers so that they have the courage to report incidents of medication errors to improve patient safety.

Management, especially the head of IFRS, needs to evaluate the current service policy system which is more effective and efficient. So that all forms of new information related to drug preparations, LASA, and SPO can be distributed or conveyed as a whole to all officers by putting them into the system or documented in a place that is easily seen by officers.

Management needs to carry out periodic performance assessments of IFRS units related to achievement of pharmaceutical quality indicators as a step to improve service quality.

Suggestion

Based on the results of the research that hasbeen carried out, here are several suggestions that researchers can give, namely:

1. Management needs to increase its gratitude to all supervisory respondents by conducting an assessment on the performance of officers and carry out recredentials related to officers' knowledge of pharmaceutical service standards at X Bintaro Hospital.
2. The Head of IFRS is expected to always take the time to give a morning briefing before carrying out services. briefings is an activity carried out by superiors to provide brief explanations or meetings to provide brief explanations, with briefings that are often carried out by superiors it is expected that the leadership can directly remind subordinates about work values that always prioritize patient safety.
3. The need for IFRS heads and hospital management to train officers in summarizing or putting in new information received and combining it with existing systems.
4. Management needs to increase the demands of the work environment (management and direct superiors) on the achievement of performance indicators for officers as the highest authority. Performance indicators that are not achieved can be used as the basis for management's assessment in improving the quality of employees. The need to evaluate the contents of the SPO (Standard Operating Procedure) that is owned also helps management to see whether the content in the SPO (Standard Operating Procedure) is appropriate, clear and effective to serve as a unit work guideline.
5. It is hoped that further research can be carried out carry out follow-up research with different research designs and types of qualitative research to increase the assessment of research results with more specific research variables so

that results can be generalized from existing research, involving respondents, namely groups of health workers and nonhealth workers so that the results can be more generalized because the population and larger samples and adding individual interviews as a data collection method.

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