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NURSES' COMPLIANCE ABOUT PATIENT SAFETY IN IMPROVING DRUG SAFETY AS AN EFFORT TO REDUCE MEDICATION ERROR: A LITERATURE REVIEW

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ABSTRACT

Patient safety is a patient who is free from injuries that do not occur or free from damage and/or potential illness, physical, social, psychological, disability, and death related to health care. Nurse compliance is compliance to an action, procedure or regulation that must be done or obeyed. The purpose of this paper was to know the Nurses' Compliance towards Patient Safety in improving Drug Safety as an Effort to Reduce Drug Errors. The method of this research was a literature review design. The literature search process used several databases including ProQuest, Ebsco, and the Willey Online Library. The search was done on literatures published between 2013 and 2018. Keywords included were keywords relevant to the material, including "nurse compliance - drug safety - drug error - nurse medication error". The data analysis used a specific conceptual approach which analyzed an outline to achieve objectives using PRISMA. Sixth articles fullfilled the inclusion criteria. This study found various research articles under discussion that the nurses' compliance about patient safety in improving drug safety as an effort to reduce medication errors is to report patient safety incidents, near injury, potential incidence of injury, non-injured incident and unexpected events. Provision of trainings and updating knowledge about patient safety in terms of reducing medication errors are needed. In addition, compliance to report if there is a patient safety incident also needs to be improved, because the report can be an early response to patient safety incidents in the future which can prevent the same incident to happen again.

Keywords: medication error; nurse's compliance; patient safety

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INTRODUCTION

Compliance is a positive attitude of individuals who agree with changes in accordance with the specified goals. Non-compliance is a condition in which the nurse will actually work, but there are factors that require compliance to take action. Nurse compliance is a compliance to an action, procedure or regulation that must be done or obeyed. Compliance is part of the care provided by a healthcare professional. Patient safety is a patient who is free from injuries that do not occur or free from damage and/or potential illness, physical, social, psychological, disability, and death related to health care. IHSG issued 6 Patient Safety Goals (International Patient Safety Goals/IPSG) which are the guidelines of standar procedure operational (SPO) in almost all hospitals. Increasing the safety of using drugs requires attention (Hariyati & Sutoto, 2019).

Medication errors are a serious and complex problem in clinical practice, especially in intensive care units whose patients can potentially suffer very serious consequences

because of the critical nature of their diseases and the pharmacotherapy programs implemented in these patients (Gracia et al., 2019). Patient safety is also an attribute of healthcare systems. It minimizes the incidence and its impact, as well as maximizes recovery from adverse events (Habahbeh & Alkhalaileh, 2020). The results of previous research (Widiasari et al., 2019) resulted that there was a relationship between the application of patient safety and patient satisfaction (p = 0.001, OR = 1.216).

A cohort study from Medicare according to (Sorra et al., 2012) stated that registrants in outpatient clinic settings showed an adverse drug adverse event rate of 50.1 per 1,000 person annually, with 38 percent of the events categorized as severe, life threatening, or fatal. Furthermore, each of the analysis showed that the largest incidence of medication errors was in ICU of X Hospital City which was in the form of administration error with 144 events (46.91%), followed by dispensing error with 119 events (38.76%), while the smallest incidence was prescription error by 44 events (14.33 (Lolok & Fudholi, 2014). The purpose this research was to evaluate how closely the double check policy followed by nurses in the pediatric field and also to identify the type, frequency and extent of drug administration errors that occured despite the double check process (Alsulami et al., 2014). This study tested a multivariate model that explored unit-level predictors of drug delivery accuracy (Donaldson et al., 2014).

Drug administration error is one of the main concerns in patient safety. The level of using a more robust method for correct outcomes (Jhon et all, 2013). Treatment errors involving hospitalized patients have been a growing challenge over decades (Williams, 2018). About 7,000 patients in hospital died each year as a result of complications that result from medication errors. The nurse holds one main responsibility for administering medication for patients in the hospital (Goodstone, 2013). Smart Pump Technology is a medical device used by pediatric nurses to improve patient safety and reduce errors during drug administration (Mason, 2013). Patient safety and patient quality are at the heart of health service delivery (Tutiany et al., 2017). *Adverse event* is any accidental event and condition that results or has the potential to result in preventable injury to the patient (KKPRS, 2015). The contribution of nurse compliance in improving drug safety according to the Joint Commission International (JCI) (KKPRS, 2015). The purpose of this paper was to know the Nurses' Compliance towards Patient Safety in improving Drug Safety as an Effort to Reduce Drug Errors from a literature review design.

METHOD

The method of this research was a literature review design.

Source

Three scientific databases were used to obtain relevant sources related to specific problems. These databases included ProQuest, Ebsco, and the Willey Online Library.

Search

The search was conducted on the publication between 2013 and 2018 with the keywords of nurse compliance - drug safety - drug error - nurse medication error. To concatenate the keywords, Boolean operators "AND" and "OR" were applied in the search. The same criteria for each applied scientific database.

Study selection

The search of research journal on ProQuest, EBSCOHost, Willey online library found total journal data of 14,090 results. After that, the results were classified again into full text, obtaining 9,501 results in which the journals were 8,416 results. Based on the publication date of years, it obtained 3,504 results. The journal of clinical nursing obtained 1,812 results. After we reclassified specifically on nurse compliance in terms of increasing the safety of drugs to reduce drugs error, it obtained 6 data.

Data analysis

The results of studies discussed used a specific conceptual approach which analyzed an outline to achieve objectives using PRISMA. The flow chart can be seen in diagram 1.1 below:

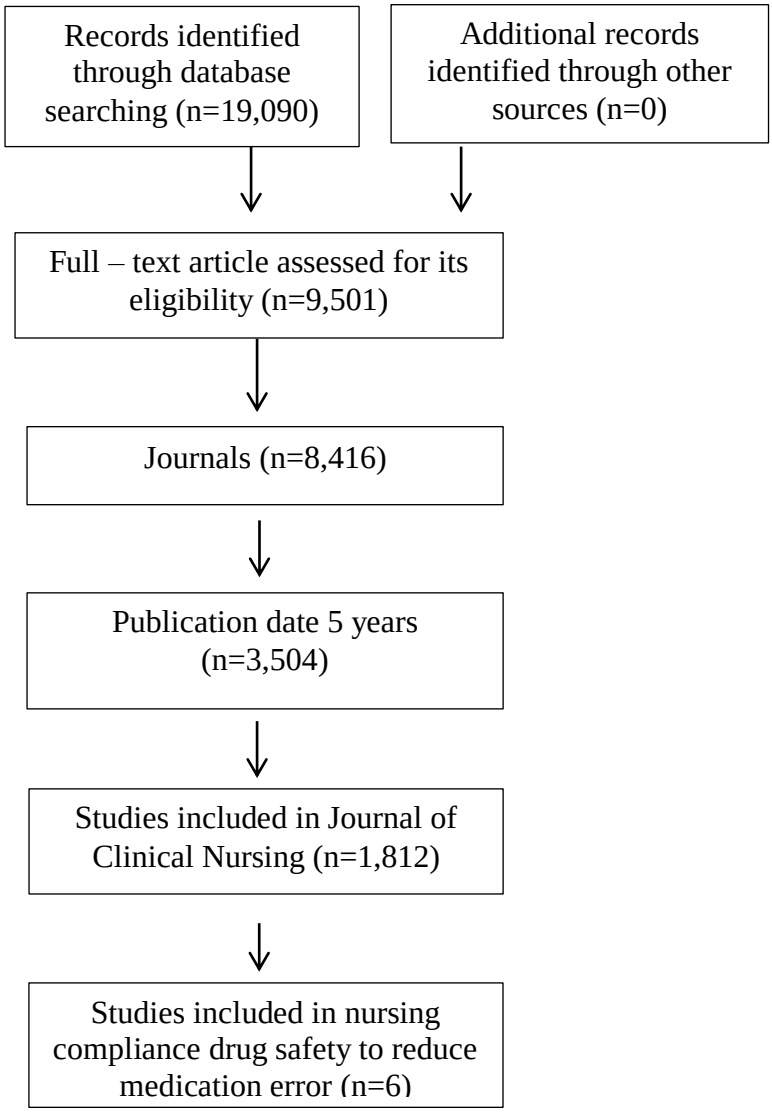

Diagram 1.1: Prisma flow

Table 1.
Nurses' Compliance towards Patient Safety in improving Drug Safety in an Effort to Reduce Medication Error

No	Title & Source	Objective	Design	Sample	Main Findings
1.	Title: Pediatric nurses' adherence to the double-checking process during medication administration in a children's hospital: an observational study Journal of Advanced Nursing (Alsulami et al., 2014)	Purpose: To evaluate how closely the double check policy is followed by nurses in the pediatric field and also to identify the type, frequency and extent of drug administration errors that occur despite the double check process.	Prospective observational research design	N: 191 pediatric nurses	There were variations between the pediatric nurses' adherence to checking steps during drug administration. The most frequent type of administrative error or deviation from policy involved drugs that were given to parents to give to children when the nurse was not present.
2.	Title: Predictors of Unit-Level Medication Administration Accuracy. Journal of Nursing Administration (Donaldson et al., 2014)	This study tested a multivariate model that explored unit-level predictors of drug delivery accuracy (MA).	Using direct observation, cross-sectional design	Data submitted by 124 adult patient care units for 15,660 drug doses	Nurses adherence to safe practice of MA, combined with unit characteristics and staff factors, has the potential to dramatically improve MA accuracy.
3.	Title: Medication administration errors by nurses: adherence to guidelines Journal of Clinical Nursing (Lan et al., 2014)	Purpose & Objectives drug administration error is one of the main concerns in patient safety. The research aimed to study the level using a more robust method for correct results.	The research developed a checklist using basic treatment guidelines including the Five Rights, infection recommendation information and drug-keeping rules.	Clinical nurse	It was concluded that the overall results showed a low level of nurses' adherence to the guidelines, suggesting that many drug administration guidelines were not strictly followed. Researcher found key instances where nurses did not follow the guidelines, including many of the Five Rights. About one in four elements was violated in its entirety. Related to clinical practice, the results of this study can be adopted to make drug delivery guidelines more

No	Title & Source	Objective	Design	Sample	Main Findings
					practical for clinical nurses to adhere to.
4.	Title: The Use of Protocol Cues to Improve Medication Competency of Nursing Students An Applied Dissertation Submitted to the School of Health Management in Partial Fulfillment of the Requirements for the Degree of Doctor of Health Education (Goodstone, 2013).	Approximately 7,000 hospital patients died each year as a result of complications resulting from medication-related errors. The nurse held the primary responsibility for administering medication for patients within the hospital.	A quasi-experimental, control group, posttest design was used to solve the research problem.	Samples were taken from practical nurses, associate degrees, and undergraduate students as many as 60 students.	The research involved the safety of drug administration as valuable and must continue to look for ways to reduce errors and improve patient safety outcomes. Nursing students need to learn and apply basic safe drug administration protocols during their clinical training. Nurses can see this computerized system as flawless, but cannot rely on computers to prevent errors; there must be a human component.
5.	Title: Pediatric Nurses' Perceptions of Smart Pump Technology to Enhance Patient Safety and Error Reduction Dissertation & Thesis (Mason, 2013).	Smart Pump Technology is a medical device used by pediatric nurses to improve safety and reduce patient error during drug administration.	Quantitative, correlational descriptive study	A sample of 80 pediatric nurses	The results of the analysis showed a statistically significant relationship between the pediatric nurses' perceptions of the infusion pump and patient safety. Nurses need to understand Smart Pump Technology to keep patients safe. The findings revealed younger nurses perceiving Smart Pump Technology improved patient safety more than older nurses.
6.	Title: Influence of the medication environment on the unsafe medication behavior of nurses: A path analysis. Willey Journal of Clinical Nursing (Yu et al., 2018)	To explore the relationship between the treatment environment and nurses' unsafe treatment behavior and to analyze the path of influence.	This study used a correlative design with a self-administered questionnaire, and the SHEL model, an acronym for software, hardware, environment	1,012 clinical nurses	Nursing treatment behavior that was unsafe should be improved. The treatment environment is a predictor of unsafe treatment behavior. The care manager must actively improve the treatment environment to reduce the incidence of unsafe treatment behaviors.

No	Title & Source	Objective	Design	Sample	Main Findings
			and life elements, which was used as a framework for treatment environments		

RESULTS

There were variations between pediatric nurses' compliance to checking measures during drug administration. The most frequent type of administrative error or deviation from policy involves drugs that are given to parents to be given to children when the nurse is not present (Alsulami et al., 2014). The main categories emerged from the data include accessibility of information, time constraints, practice problems and professional conflicts. Medical administration is a complex area of pediatric nursing practice. Nurses compliance to safe practices of medical administration, combined with unit characteristics and staff factors has the potential to dramatically increase accuracy (Donaldson et al., 2014). The results showed a low level of compliance to the guidelines, indicating that many drug administration guidelines were not strictly followed. We found key examples where nurses did not follow guidelines, including many of the five rights. About one in four elements was violated in its entirety.

Related to clinical practice, the results of this study can be adopted to make drug delivery guidelines more practical for clinical nurses to comply (Alsulami et al., 2014). Research involving the safety of drug administration is valuable and must continue to look for ways to reduce errors and improve patient safety outcomes. Nursing students need to learn and apply basic safe drug administration protocols during clinical training. Nurses can see this computerized system as flawless, but can't rely on computers to prevent errors; there must be a human component (Goodstone, 2013). The results of the analysis showed a relationship between nurses' perceptions of Smart Pump Technology and patient safety. Nursing treatment behavior that is unsafe should be improved. The treatment environment is a predictor of unsafe treatment behavior. Care managers must actively improve the treatment environment to reduce the incidence of unsafe treatment behaviors (Yu et al., 2018).

DISCUSSION

Safety has become a global issue including for hospitals. Therefore, patient safety is a top priority to implement and this is related to the occurrence of a Patient Safety Incident in the hospital (KKPRS, 2015). The Global Patient Safety Collaborative will enable countries to collaborate at global, regional and national levels to focus on patient safety as one of the most important components of health care delivery (Tingle, 2020). Medication errors are a serious and complex problem in clinical practice, especially in intensive care units whose patients can suffer potentially very serious consequences because of the critical nature of their diseases and the pharmacotherapy programs implemented in these patients. The origins of these errors discussed in the literature are wide-ranging, although far-reaching variables are of particular special interest to those involved in training nurses. The main objective of this research was to study if the level of knowledge that critical-care nurses have about the use and administration of

medications is related to the most common medication errors. (Gracia et al., 2019). Therefore, to improve the quality of patient safety services at the unit level, efforts must be made to change the nurse's compliance about patient safety in improving drug safety as an effort to reduce medication errors in all hospital units. This is also supported by (Najihah, 2018) who said that One effort that can be made to improve the application of a patient safety culture to minimize patient safety incidents is to report patient safety incident, either near injury, potensial incidence of injury, the incident was not injured and unexpected events.

CONCLUSION

From various research articles under discussion, it can be concluded that the nurses' compliance about patient safety in improving drug safety as an effort to reduce medication errors is to report patient safety incidents, near injury, potential incidence of injury, non-injured incident and unexpected events. Therefore, awareness about nurse's compliance about patient safety in improving drug safety as an effort to reduce medication errors still needs to be improved. One of them is by providing trainings and updating knowledge about patient safety in terms of reducing medication errors. In addition, compliance to report if there is a patient safety incident also needs to be improved, because the report can be an early response to patient safety incidents in the future and prevent the same incident to happen again.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflict of interest to disclose.

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7

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