Development of a Patient Safety Model in Independent Practice of Midwifery in Bogor Regency, West Java, Indonesia

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Abstract

The concept of patient safety has been developed due to the increased incidence of medical error in Indonesia. Although incidents related to patient safety occurs in health servicessuch as the Independent Practice of Midwifery or *BidanPraktikMandiri*(BPM), it has not received enough attention from the stakeholders. This research discusses the implementationof Patient Safety Model atthe Independent Practice of Midwiferyin Bogor District, West Java Province. The research was conducted with mixed method approach, using three-way phase. The first phase is the construction on patient safety goals in BPM by doing focus group discussion on 3 groups and 2 in-depth interviews with 2 informants. The second phase is the model development in the form of validation based on findings in the first phase. Additionally, phase 2 is done by using cross-sectional design of 90 midwives and SEM analysis using PLS. The third phase is conducting a quantitative evaluation model with pre and post design at 30 BPM which have had training on Patient Safety Model. The findings show allvariables (patient safety goals, knowledge, attitudes, motivations, and behaviors related to the patient safety) are valid in shaping Patient Safety Model. The results on Model application evaluation (phase 3) indicate that the model effective in increasing knowledge (p 0.000), attitude (p 0.000), motivation (p 0.000) and behavior (p 0.001) on patient safety in BPM.

Keywords: *Patient Safety Model, Independent Practice of Midwifery, Medical Malpractice.*

Introduction

Patient safety is one of the global issues in health care. The World Health Organization (WHO) reports millions of patients around the world who are at risk of getting an injury, even deaths each year are related to errors in health practices. Therefore, WHO declaration of the World Alliance for Patient Safety institution as a form of world attention to patient safety in various countries.[1] Furthermore, the World Alliance for Patient Safety aims to coordinate global actions related to patient safety and fight the problems of patient loss that are increasingly reported.[2] Patient safety is defined as the overall behavior of individuals and organizations based on a set of beliefs and values aimed at reducing the chances of patients getting injured.[3] A report from the Institute of Medicine (IOM) in 2000 stated that there were 44,000 to 98,000 deaths due to medical errors that occurred in the United States.[4]The report has moved the world health system to change the health service paradigm of the importance of patient safety. Safety has become a global issue including hospitals.

There are five important issues related to hospital safety, namely: safety of the safety of health workers, buildings and hospital equipment that have an impact on the environment. The five aspects of safety are very important to be carried out in each hospital. But it must be admitted that hospital institution activities can work if there are patients. Therefore, patient safety is a top

priority to be implemented and this is related to the quality and image of the hospital.[4] Health services are basically to save patients. In hospitals there are hundreds of types of drugs, hundreds of tests and procedures, and tools with the technology. Meanwhile, various types of professional and non-professional personnel are ready to provide 24-hour continuous service. The diversity and service routine if not managed properly can lead to Unexpected Events. In Indonesia, Hospital Patient Safety Movement was announced by the Minister of Health of the Republic of Indonesia on August 21, 2005, where each hospital can form a hospital patient safety team.[5] Hospital Patient Safety Movement is a system that prevents injuries caused by mistakes due to carrying out actions (commission) or does not take actions that should be taken (omission) (Ministry of Health.[4] This is in line with WHO policy (2004) that health services are required to provide safe and comfortable services for patients. This focus on patient safety is driven by the still high rate of adverse events (Shojania.[6]

Research Method

The study approach used in this study is a mixed method. In the early stages of developing the model a qualitative approach was made using the exploratory research design. The next model trial is carried out with quantitative methods using analytical survey methods, namely cross sectional study design with Partial Least Square test and prospective cohort study design without control (Pre-Post test). This research was conducted in three stages of research, namely the construction phase of the Patient Safety Target in the Independent Practice Midwife, followed by the second stage, Model Development and Patient Safety Training Module at BPM, and the third stage was testing the application of the Patient Safety Model at BPM. All stages of this research were conducted in Cibinong Subdistrict, Gunung Putri Subdistrict and Cileungsi District, Bogor Regency. These three regions have the highest number of BPM visits in Bogor Regency.[6] The initial stage began with preliminary research, namely conducting a patient safety risk survey at BPM and carried out on six BPM. From the findings of the preliminaryresearch, the concept of patient safety at BPM was based on the concept of patient safety at the hospital. This stage was carried out by reviewing the literature, so that a draft patient safety model was obtained at BPM. The researchers then conducted FGDs and in-depth interviews with BPM, IBI administrators, patients and the Hospital Accreditation Committee (KARS). The results of this activity were then analyzed to obtain a draft Safety Target for Patients in Independent Practice Midwives. To get confirmation of the results, a panel expert was made consisting of the IBI Central Management, midwifery lecturers, hospital midwives, independent practice midwives and KARS. At this stage the experts discussed the accuracy of patient safety targets in BPM which were formed based on the results of qualitative studies. The population of this study was BPM in Bogor Regency, which amounted to 580 people. This amount is only 40% of the total number of midwives in Bogor Regency.

Results and Discussion

Patient Safety Model in Independent Practices of Midwifery

The concept of patient safety, which was launched by WHO in 2004, has a vision to provide safe health services, anytime and anywhere for all patients.[7] With this vision, the concept of patient safety means that it can be applied to all health care facilities, including the Independent Practices Midwifery. However, patient safety regulations in Indonesia are still focused on hospital services as stated in Ministry of Health Regulation No. 1691 / Menkes / Per / VIII / 2011 con Hospital Patient Safety. This condition is different from the conditions in Ireland which have made a Minister of Health and Child Regulation that regulates patient safety in midwives and nurses (Nurses and Midwives Bill 2010).[8] Construction of the Patient Safety Model at BPM is very necessary in order to develop patient safety in independent midwives. Studies conducted in the Netherlands showed that out of 1000 patients in 20 midwives practice, there were 39 incidents related to patient safety that occurred in 12midwivespractices.[9] Meanwhile in Indonesia data on patient safety incidents at BPM have not yet been available due to the absence of reporting obligations related to incidents of patient safety at BPM.

The above facts show that there are risks associated with patient safety in independent midwives. Therefore, the Patient Safety model at BPM is considered important to minimize the risk of patient safety in independent midwives. However, efforts to improve patient safety at First Level Health Facilities (FKTP) such as Puskesmas, Pratama Clinics, Doctors' Independent Practice Sites and Dentist's Independent Practice Sites have been carried out through the accreditation process, as stated in Ministry of Health Regulation No. 46/2015. In the accreditation of FKTP, most of the assessment points were carried out on aspects directly related to patient safety goals. For BPM, accreditation is done by Accreditation and Certificate of Pomegranate Midwives. However, on the instrument of assessment of the Pomegranate Midwife, there are still very few elements of patient safety assessed. FKTP accreditation is very important because it is one of the credentials requirements of BPTP Health FKTP. Based on Minister of Health Regulation No. 46/2015 that in 2019 all FKTPs must undergo accreditation for the credibility of BPJS. The main objective ofthis activity is to make the National Health Insurance a success by increasing the number of FKTP in collaboration with BPJS Kesehatan, so that in the end it can increase the coverage of BPJS Health participation.

Accuracy of Patient's Identification

The first goal of patient safety is the accuracy of patient identification. The results of the qualitative study show that all midwives have understood and made efforts to correctly identify patients. Appropriate identification of patients is very important to avoid mistakes that have the potential to cause unsafe conditions. WHO (2007) states that misidentification can lead to errors in drug administration, errors in health tests / tests, and even errors in delivering babies to their families. In 2005, the National Patient Safety Agency reported that from November 2003 to July 2005, there were 236 incidents caused by the absence and inaccurate identification of patients. The results of research conducted by Joint Commission International in the United States found an error in identifying patients reaching 13% of surgical cases and 67% misidentification of patients in providing blood transfusions. From 67% of blood transfusion errors 11 of them died (Meeting of The International Patient Safety Goals. 2010). Therefore, several strategies have now been applied to reduce the risk of errors in identifying patients. The approach taken by WHO (2007) in reducing patient misidentification is a system approach, namely ensuring that health services have a correct patient identification system.

The system can be in the form of giving emphasis to health workers to check the identity of patients with health services to be received (laboratory results, specimens) before the service is carried out. Next is the use of three of the two types of identification to verify the patient, namely name, date of birth, and medical record and use the standard patient identification format (color identification bracelet). Approaches to workers are carried out by providing training on procedures and verification of patient identity. Another strategy suggested by WHO is an approach to patients, namely by providing education about the importance of correct identification data (WHO Collaborating Center for Patient Safety Solutions, 2007). Of the three approaches above, the system approach has been carried out by the BPM by manual method, namely by recording the identification of patients, in addition to using names and age also by adding the identity of the husband or adjusting to the KIA book. However, when compared with the patient identification policy, the identification that should be used is the name and date of birth, so that in the future it is recommended for changes to the status of medical records to use a replacement birth date. In addition, BPM also attaches a signboard to each patient's bed and calls the patient's name each time he wants to give medication to avoid misidentification. The use of identification bracelets as done in the hospital. But it has not been implemented in patients at BPM. Based on researchers' observations, a new identity bracelet is used for babies born in BPM and have not been used for the mother of the baby. Even though this is the case, BPM can take the initiative to start using the patient's identity bracelet in accordance with the standard. Procurement of the bracelet is also quite cheap and easy to obtain. Moreover, identity writing in the bracelet can still be done manually. As an indicator of the application of the Patient Safety Model, BPM must be able to show complete patient registry data. This means that all requested identities must be filled in correctly. To

facilitate data verification, BPM can include a copy of the patient's identity (KTP / KK) to be attached to the registry book. Correct and correct identification will reduce unexpected events. If possible, it will eliminate risks and identification consequences and errors so that it will improve the quality of service quality and patient safety.

Effective Communication Improvement

The next goal of patient safety is effective communication. Communication between midwives and patients is an issue that has been understood by BPM. This is one of the good indicators in realizing patient safety at BPM. Incorporating aspects of communication in the Patient Safety Model at BPM is the right thing. The study conducted by Marchon and Junior (2014) and Nygren et al. (2013) states that inappropriate communication between service providers is the most influencing factor for adverse events.[10] Whereas according to Liu et al (2013), ineffective communication is the most important surviving cultural problem.[11] Shekelle et al. (2013) stated that one third of the patients' unwanted events were caused by human error and the system.[12] The results showed that in the period 1995-2005 the root causes of medical errors were 66% due to ineffective team communication.[12] Therefore, it can be said that the risk of experiencing medical errors will increase in addition to health workers experiencing high stress and workload but also when there is no clear or effective communication.

Good interactions between patients and health workers can establishbetter communication allowing patients know who to contact when something goes wrong. The results above show that in order to be able to realize a culture of safety for patients, communication has an important role. Communication must be intertwined in each phase of interaction between midwives and patients and in every interaction between health workers. Communication is everything related to the transfer of information between midwives and patients and vice versa, accurately and on time while paying attention to the rewards of each individual. The ineffectiveness of communication occurs because of the perception of patients who judge that health workers do not have the initiative to open effective communication. While from a health worker perspective, ineffective communication arises because of the busyness of the officers.[11] This can be seen from the activities of midwives at BPM who take care of all things in the BPM, ranging from managing patient administration, giving therapy, implementing midwifery actions, giving counseling to compounding and delivering drugs. Being responsible for everything in the BPMwill have an impact on the reduced time midwives have to communicate effectively with patients.

Safety of Prescribed Medicines

The safety of medicines is the number three target for patient safety. In every health service such as BPM, the practice of administering medicines is something that is definitely done by midwives. Various types of medicines are available ranging from mild medicines, such as vitamins, to drugs that need special handling and prescription, such as antibiotics. The large variety of drugs available raises the risk of drug errors due to drug labeling errors. Because of the potential risk, in the initial construction of the Patient Safety Model at BPM, drug safety was one of the goals in patient safety at BPM. Based on the results of the FGD it was found that midwives were also aware of this so that this variable was still included in the concept of the Patient Safety Model at BPM. Errors in administering drugs are harmful to patients. One of the factors that cause this error is labeling and packaging of drugs.[13] The study conducted by Berman (2004) estimated that there were around 33% of medication errors due to confusing labels and drug packaging.[14]Orser (2000) also argues that a drug label that was confusing, inaccurate and incomplete caused a 22% error in drug administration.[15] The safety aspects of this drug need to be addressed by midwives.

Based on the FGD with BPM, several BPMs have made mistakes in giving medicines because of incomplete labels on drug packages that have the same packaging. Of course if this often happens besides being able to endanger the lives of patients, it can also endanger the reputation of the midwife. Given the importance of labeling drugs, according to Hellier et al (2006), midwives must pay attention to important aspects of labeling that can be directly a tool for rapid drug identification.[13] The first aspect in labeling is

the signal word ("Danger", "Attention") as a warning related to the content contained in the drug. Second, the color aspect, which is a marker of the level of danger in the drug content. Usually red indicates the highest level of danger. Other aspects such as letter size, label form (inverted triangle which means containing substances that are not stable, and diamond shapes and octagon which means markers of danger) and message sentences also need to be observed by midwives. Another thing that needs to be considered by midwives is the silmilarity in the names of drugs (Look Alike Sound Alike (LASA).

Certainty of Procedures and Actions of Midwifes

Patient safety target number four is the exact location, the right procedure, the right process, the right patient and appropriate midwifery actions. The results of this study indicate that all midwife informants stated that they followed the procedure in all their actions. Midwives follow all referral procedures, where all high-risk patients such as reclamation and PEB will definitely be referred to a specialist or hospital. This result is different from a study conducted in midwives in Iran, which stated that some procedures when assisting birth at the first and second times were still not done properly. [16] For example, at Kala I, midwives lacked emotional support to patients. Likewise, whileat Kala II, the procedure for examining vital signs and hand washing procedures is not fully followed. However, aside from the three procedures above, other procedures when taking action on Kala I, II, III and postpartum patients have been carried out correctly.[16] Even so, in Indonesia based on the observations of researchers, BPM has the advantage of providing emotional support to its patients. This is what causes many patients to choose to give birth and take other midwifery actions at BPM because midwives are able to approach personally and emotionally when handling patients.

Accuracy in adhering to the established care/ midwifery procedures is very useful for preventing errors and maintaining patient safety. For example, with midwives providing emotional support to patients will be able to reduce medical interventions and increase normal births, and reduce pain and anxiety.[17] Observation of vital signs such as body temperature, pulse. and blood pressure is very useful for preventing sepsis, bleeding and increasing blood pressure.[18] In Indonesia, procedures related to maternal health services are outlined in the Pocket Book of Maternal Health Services.[5] But in daily practice at BPM, the guidelines used by midwives are the Maternal and Child Health Book (MCH Handbook). Meanwhile related to the rules that become the legal umbrella for maternal and child health services are regulated in the Republic of Indonesia Minister of Health Regulation No. 97/2014 concerning health services before pregnancy, pregnancy, delivery, and postpartum period, implementation of contraception services, and sexual health services. Therefore, there is no reason for the midwife not to follow the prescribed rules and procedures. By following the procedure, compliance is related to the right procedure and proper midwifery actions can be fulfilled. The indicator of this fulfillment is the availability of SOPs from all procedures performed. This SOP is also socialized to patients through posters. In addition, other indicators include the availability of work manuals for actions taken, such as manuals for proper hand washing, normal delivery assistance and referral. Another indicator is zero reporting related to safety incidents in patients.

Infection Risk Reduction Related to Health Services

'Clean Care is Safer Care' is one of the main taglines of the World Alliance for Patient Safety that tries to answer the challenges associated with infection in health services. Infection is a major problem that threatens the safety of millions of patients worldwide.[19] Therefore, the hand-hygiene intervention program was carried out throughout the world. A total of 18 studies show that hand-hygiene intervention in health services is significantly able to reduce infection rates. Martin-Madrazo (2009) mentions the number of infections can be reduced by as much as 50% just by making an effort to wash hands. [20] The results of a qualitative study conducted at BPM showed that most midwives realized that hand washing was a way to preventthe risk of infection. Unfortunately, these activities are not carried out consistently in each patient treated. Midwives only wash when examining the patient first and after examining the last patient. The argument for this action is because not all patients get an internal examination. Most patients visit BPM only to do

ANC and KB. This is a less positive behavior and this is consistent with studies in India that adherence to hand washing before and after examination is only 63% and 93%.[21] Midwives very often make skin contact with patients. The contact is carried out with contaminants during patient care such as contact with the patient's body fluids and blood. Therefore, hand hygiene is a very important, inexpensive and effective way to prevent cross infection.[22]

Conclusion

Patient safety in hospital is a system where hospitals make patient care safer. The system includes risk assessment, identification and management of matters relating to patient risk, reporting and analysis of incidents, the ability to learn from incidents and their follow-up and implementation of solutions to minimize the risk. The system is expected to prevent injuries that are caused by mistakes due to carrying out an action or not taking the necessary actions. There are several targets for handling patient safety, among others: (1) accuracy of patient identification, (2) improving communication effectively, (3) increasing security of high-alert medications, (4) ensuring correct place, correct procedure, and correct patient surgery (5) reduce the risk of infection related tohealth services. Therefore, in the future it is necessary to make a policy that regulates BPM accreditation in order to improve service quality and patient safety of BPM. In addition to the application of quality midwifery care, BPM also needs to implement patient safety to maintain patient safety. Patients as BPM service users have the right to be given quality and safe services, given that midwives work on their own so that a high standard of service is needed in preventing unwanted occurrences in providing midwifery services. The complexity in midwifery services provided can lead to vulnerability to medical errors that can lead to human error or negligence.

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