

The Effect of Pre-Anesthesia Assessment on Patient Safety in the Operating Room

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Abstract

Background: The development of the science of anesthesia provides consideration in administering the type of anesthesia used. The pre-anesthesia assessment is the basis for planning the findings on the monitor during and after anesthesia. The completeness of the pre-anesthesia assessment has an important role in patient safety, if the anesthetic assessment is not properly completed it allows errors in the operation process. Patient safety goals are the main requirement to be implemented in all hospitals accredited by KARS. Patient safety goals intend to drive specific improvements in patient safety. This goal highlights problematic areas of health care. The wrong-site, wrong procedure and wrong-patient surgery are something that is worrying and not uncommon in the hospital. This error resulted from ineffective communication between members of the surgical team, not involving the patient in site marking, and no procedure for verifying the surgical site. **Objective:** The study aims to see the effect of the completeness of the pre-anesthesia assessment on patient safety. **Methods:** The research design is a cross-sectional study. The population in this study were patients who underwent surgery with a total sample of 70 people. Data processing through the stages of editing, coding, entry, and cleaning. Univariate analysis and bivariate analysis used the chi-square test with a 95% degree of confidence $\alpha = 0.05$. **Results:** The results showed that the completeness of the pre-anesthesia assessment was complete with a percentage of 88.6%. Good patient safety with a percentage of 65.7%. There was no significant relationship between the completeness of the pre-anesthesia assessment and patient safety ($p=0.076$). **Conclusions:** To improve the implementation of pre-anesthesia assessments, hospitals need to review the completeness of filling out pre-anesthesia assessments by anesthesiologists before patients are operated on, to prevent errors in improving patient safety. Prepare facilities and infrastructure for the needs of patient safety programs by accreditation standards.

Keywords : Assessment, pre-anesthesia, patient safety, operating room

Abstrak

Latar Belakang: Perkembangan ilmu anestesi memberikan pertimbangan dalam pemberian jenis anestesi yang digunakan. Penilaian pra-anestesi merupakan dasar untuk merencanakan temuan pada monitor selama dan setelah anestesi. Kelengkapan pengkajian pra anestesi mempunyai peranan penting dalam keselamatan pasien, jika pengkajian anestesi tidak dilakukan dengan baik maka memungkinkan terjadi kesalahan pada proses operasi. Sasaran keselamatan pasien menjadi syarat utama yang harus diterapkan di seluruh rumah sakit yang diakreditasi KARS. Sasaran keselamatan pasien bertujuan untuk mendorong peningkatan spesifik dalam keselamatan pasien. Tujuan ini menyoroti bidang-bidang pelayanan kesehatan yang bermasalah. Salah lokasi, salah prosedur, dan salah pasien dalam melakukan operasi merupakan hal yang mengkhawatirkan dan tidak jarang terjadi di rumah sakit. Kesalahan ini diakibatkan oleh tidak efektifnya komunikasi antar anggota tim bedah, tidak melibatkan pasien dalam penandaan lokasi, dan tidak adanya prosedur verifikasi lokasi pembedahan. **Tujuan:** Penelitian bertujuan untuk melihat pengaruh kelengkapan penilaian pra anestesi terhadap keselamatan pasien. **Metode:** Desain penelitian adalah studi cross-sectional. Populasi dalam penelitian ini adalah pasien yang menjalani operasi dengan jumlah sampel sebanyak 70 orang. Pengolahan data melalui tahapan editing, coding, entry, dan cleaning. Analisis univariat dan analisis bivariat menggunakan

*uji chi-square dengan derajat kepercayaan 95% $\alpha = 0,05$. **Hasil:** Hasil penelitian menunjukkan kelengkapan asesmen pra anestesi tuntas dengan persentase 88,6%. Keselamatan pasien baik dengan persentase 65,7%. Tidak terdapat hubungan yang signifikan antara kelengkapan penilaian pra anestesi dengan keselamatan pasien ($p=0,076$). **Kesimpulan:** Untuk meningkatkan pelaksanaan asesmen pra anestesi, rumah sakit perlu meninjau kelengkapan pengisian asesmen pra anestesi oleh dokter anestesi sebelum pasien dioperasi, untuk mencegah kesalahan dalam meningkatkan keselamatan pasien. Menyiapkan sarana dan prasarana kebutuhan program keselamatan pasien sesuai standar akreditasi.*

Kata Kunci : Pengkajian, pra anestesi, keselamatan pasien, ruang operasi

I. BACKGROUND

Pre-anesthesia assessment can be carried out before admission to the hospital or before surgery. According to Permenkes No. 18 of 2016 concerning permission to practice anesthesiologist chapter III article 10 the anesthesiologist in carrying out his professional practice is authorized to provide anesthesia management care services in the pre-anesthesia assessment. To do this, nurse anesthetists must have knowledge, attitudes, and skills regarding pre-anesthesia assessment in improving the safety of operating patients in hospitals.¹

The Institute of Medicine (IOM) records that as many as 44,000-98,000 people die annually in the United States caused to medical errors. The number of deaths due to adverse events (KTD) in hospitalized patients in America is 33,6 million. Patient safety incident reports (IKP) in England based on the National Reporting and Learning System (NRLS) in 2015 recorded 825,416 incidents. The report increased by 6% from the incident in the previous year. From these reports, 0,22% of incidents were found to have resulted in death.

The National Patient Safety Agency 2017 reported some IKP incidents in England in 2016 of 1,879,822 incidents, while the Hospital Patient Safety Committee (KKPRS) reported a total of 877 incidents.⁴ Compared to the number of patient safety incidents at other hospitals such as Kendal General Hospital, from incident reports in 2014 there were 1434 near-miss incidents (KNC) reports, 914 incidents of Unexpected Events (KTD) including incidents of patient falls there were 3 cases. This problem is one of the main issues in patient safety in health care.¹³

Agustina's research, 2020 on Pre-anesthesia Assessment: Not Just Compliance, found Pre-anesthesia assessment was only carried out in 19,5% of a total of 43 elective surgery

cases, but none of them wrote down the results of the assessment in the proper documents. Medical record documents regarding pre-anesthesia assessment will be completed after the operation (in the operating room). Most of the respondents thought that the pre-anesthesia assessment was carried out in collaboration between doctors and nurses. However, in practice, most of the activity in the pre-anesthesia assessment is performed by the nurse. The highest delegation from doctors to nurses occurred in the aspect of asking for informed consent and explaining fasting to patients and their families.¹⁴

There are three phases of anesthesia which include pre-anesthesia, intra-anesthesia, and post-anesthesia⁵. In the pre-anesthesia stage, a nurse will prepare the things needed during surgery, for example: conducting a pre-anesthesia assessment of the patient in the form of a pre-visit of the patient who will operate, preparation of the patient, patient shaving the area to be operated on, preparation of medical record records, preparation of premedication drugs that must be given to patients. Completeness of pre-anesthesia assessment status is very important to avoid mistakes in taking action. Research conducted by Nopan, 2018 found that the completeness of integrated patient development record documentation is still low in Type C Hospital, Padang City. Based on the problems above, the researcher is interested in researching the effect of the completeness of the pre-anesthesia assessment on patient safety in the operating room of RSI Siti Rahmah Padang

II. LIBRARY REVIEW

A. PRE-ANESTHESIA ASSESSMENT

1. DEFINITION

Pre-anesthesia assessment is an assessment that is carried out to determine the patient's condition before anesthesia/sedation is carried out. The assessment or assessment

before the anesthetic action is a series of function activities that start an operation that will be carried out. An assessment is carried out on the function of the patient's vital signs.²

Pre-anesthesia assessment involves considering information from various sources including recent medical records, interviews, physical examinations, as well as medical and laboratory test results.⁵

2. FACTORS INFLUENCING THE CHOICE OF ANESTHESIA

The consideration of anesthesia-analgesia to be given to patients who will undergo surgery, takes into account various factors, namely:¹⁵

a. Age

The choice of anesthesia in infant and child patients is general anesthesia because these patients are less cooperative. In adult patients given general anesthesia or regional analgesics, depending on the type of surgery to be performed. In the elderly, regional anesthesia tends to be chosen, unless the surgery to be performed does not allow for regional anesthesia.

b. Gender

Emotional factors and embarrassment which are more dominant in female patients are factors supporting the choice of general anesthesia, whereas in male patients this is not the case, so general anesthesia or regional anesthesia can be given. If regional anesthesia is performed in women, it is recommended to provide additional sedative drugs.

c. Physical state

Relating to the patient's systemic complications from the primary disease and the therapy being undertaken. This is important, given the interaction

between the systemic disease/medication being undertaken and the anesthetic action/drug used.

d. Operation type

Analysis of surgery or surgery produces four choices of problems, namely:

1). Location of surgery, for example: in operations in the head and neck area, general anesthesia is chosen with the facility of endotracheal tube intubation to maintain the airway, while operations in the lower abdominal, anis and lower extremities area, spinal block regional anesthesia is performed

2). In the operating position, for example: in the prone position, general anesthesia must be performed with endotracheal intubation facilities and controlled breathing.

3). Operational manipulation, for example, laparotomy surgery with extensive intra-abdominal manipulation with all the risks, requires optimal relaxation of the operating field, general anesthesia must be carried out with ET intubation facilities, and breathing again.

4). Duration of surgery, for example: in long-lasting craniotomy neurosurgical operations, general anesthesia must be performed with ET intubation facilities and controlled breathing.

e. Skills/ability to perform anesthesia and its facilities Anesthesiologists who are experienced with various anesthetic techniques can provide adequate anesthesia services by utilizing the available facilities.

f. Hospital status

determines the quality of anesthesia services in regional hospitals, which will be different from the education center hospital., The practice of anesthesia, there are 3 types of anesthesia given to patients, namely:

general anesthesia, and regional anesthesia.¹⁹

g. Hospital Policy

The standards governing the implementation of the hospital cover all functions and activities of the hospital.

B. PATIENT SAFETY

1. DEFINITION OF PATIENT SAFETY

Patient safety is the prevention of injury to patients. Prevention of injury is defined as freedom from harm that occurs accidentally or can be prevented as a result of medical treatment. Patient safety practices reduce the risk of unwanted events associated with exposure to the diagnosis environment or medical treatment conditions.¹⁶

Patient safety is a system that makes patient care safer, including risk assessment, identification and management of patient risk, reporting and analysis of incidents, the ability to learn from incidents and their follow-up, as well as the implementation of solutions to minimize risks and prevent injuries caused by mistakes due to acting or not taking the action that should be taken.¹⁷

2. PATIENT SAFETY GOALS

Every act of health service provided to patients should have a positive impact and not cause harm to the patient. Every healthcare facility must have certain standards for providing services to patients. These standards aim to protect the patient's right to receive good health care. There are several objectives of patient safety standards to improve the quality of health services in health facilities.

The goal of patient safety in hospitals is.¹⁷

- a. Creating a culture of patient safety in the hospital
- b. Increasing hospital accountability to patients and society
- c. Reduction of adverse events (KTD) in

the hospital

- d. Implementation of prevention programs so that no repetition of unexpected events (KTD) occurs

3. PATIENT SAFETY GOALS

Patient safety goals include 6 goals namely¹⁷

a. Accuracy of Patient Identification

This first target is the first thing that is important for all medical personnel to pay attention to. Patient identification must be precise, because errors in the patient identification process can occur, both during diagnosis and treatment. This identification error can occur when the patient is anesthetized, experiencing disorientation, unconscious, changing places, moving rooms, or other factors. So, the identification of this patient is carried out in two checks.

- 1) Identify the patient as an individual who will receive services or treatment
- 2) For suitability of service or treatment of the individual

There are at least two patient identities that must be identified, including patient name, medical record name, date of birth, identity bracelet, patient with code and so on. Patient room numbers and locations cannot be used in the patient identification process. The patient identification target assessment elements include:

- 1) Patients identified with 2 patient identities may not use room numbers and locations.
- 2) Patients are identified before administration of blood medications or blood products
- 3) Patients are identified before taking blood and other specimens for clinical examination.
- 4) Patients are identified before the administration of treatment and action or procedure.
- 5) Policies and procedures direct the consistent implementation of

identification across all situations and locations.

Identification of patients is something that must be fulfilled and is an important target for inpatient safety. This is because it is inconceivable that medical staff, nurses, or doctors make medical errors and medical procedures on patients who don't need that action. For example, if in practice you move rooms, have the same name, or do other things that can lead to identification errors. Misidentification of patients can lead to something fatal, such as minor medical injuries, moderate to severe or even loss of life. So, it is very important to fulfill this goal.

b. Improved effective communication

The use of communication in providing information that is effective, efficient, accurate, complete, clear, and understood by patients will reduce errors and result in increased patient safety. Communication can be done through various media. either orally, in writing, or through electronic media. Most mistakes in the medical world in communication are communications made orally or by telephone. Thus, a medical order (e.g. from doctor to nurse) requires re-recording (on a computer). After that, a re-examination is required (read back) whether the medical order has been right or one of the right steps.

Some elements that must be met in the target of effective communication are as follows:

- 1) Complete orders verbally and via telephone or complete written inspection results by the recipient of the order.
- 2) Complete oral and telephone orders or the results of the examination are read back in full by the recipient of the order.
- 3) The order or inspection result is confirmed by the person giving the order or submitting the inspection result

- 4) Policies and procedures direct the implementation of consistently verifying the accuracy of verbal or telephone communications.

c. Increased drug safety that needs to be watched out for

In addition to receiving health services in the form of action and treatment, some patients will not be separated from drug administration. The medical staff needs to pay attention to caution if the patient's treatment plan also requires the consumption of drugs. So, in the management of patient safety, Hospitals must develop an approach to improve the safety of the drugs they need to be aware of (high alert). This aims to maintain the hospital's commitment to patient safety.

Drugs to watch out for (high alert medication) is a drug that often causes serious errors-sentinel events), drugs that have a high risk of causing unwanted effects (adverse outcome) like drugs that look alike, sound similar (drug names look alike or NORUM or Look Alike Sound Alike).

d. Certainty of the right location for the right procedure for the patient

Even though the entire process of patient treatment has become a routine activity, it does not necessarily mean that there are no errors at all in inpatient management, including wrong locations, procedures, or wrong operations. Wrong location, wrong procedure, and wrong patient for surgery are worrying incidents that often occur in hospitals. Of course, this error stems from many factors. This could be due to the lack of effective communication between the medical team, the absence of a medical record review, the patient not being involved in marking the location to be operated on (site marking) the use of abbreviations for action instructions or problems related to illegibility of writing (illegible handwriting).

Hospitals also need to implement preoperative verification, especially in operating procedures in all cases. Marking the location of the operation must also exist until the operation is to be carried out and made by the operating team or the person who will carry out the medical procedure. Surgical site marking was performed in all cases including the side (laterality) multiple structures (fingers, toes, lesions) or multiple levels (spine) preoperative verification is also important with several steps including verifying the correct location, procedure, and patient, ensuring all documents and photos are displayed and relevant and verifying the availability of the tools needed in the previous procedure before carrying out the operation. Do not let, when you are in the middle of or have operated, in the middle of the road it is discovered that the patient has been switched, made the mistake or there has been another error. Because it is certainly fatal. It should not also happen that in the middle of the operation, it turns out that the marking of the location of the operation was wrong, the tools and operational needs were not available, or other errors.

Hospitals should also implement steps before incision (time out) where in this stage it is possible for all questions or errors to be resolved. Time Out is carried out at the place where the action will be carried out, right before starting the action which involves the entire operations team. For example, this policy is realized as a checklist of the operation that must be identified or checked one by one in an operation team before the operation is carried out.

e. Reducing the risk of infection in health care

Infection prevention and control is the biggest challenge in the health care setting. The increasing cost of dealing with healthcare-associated infections is a major concern for both patients and healthcare professionals. This is because infections are usually found in all forms of health care.

Including urinary tract infections, infections of the blood stream (Blood Stream Infection), and pneumonia which is often associated with mechanical ventilation that does not meet standards.¹⁷

So, as the main solution and elimination of all kinds of infections in hospitals is a policy regarding hand washing (hand hygiene). The practice of hand washing must also be carried out by medical staff, all elements of the hospital, and hospital patients properly. Every hospital can also develop this hand-washing policy with real support. For example, placing targets for hand washing, both sinks, hand washing soap, and placing alcohol-based liquids (antiseptics) in every corner of the room that is considered needed.

f. Reducing the patient's risk of falling
The case of a patient falling in a hospital can be assessed as a fairly serious incident and hitting as an injury for inpatients. For this reason, hospitals must carry out active evaluations to identify what factors make patients fall. For example, hospital hygiene factors or staff technical errors in the hospital. The evaluation also includes looking at the patient's medical history, the drugs given by gait to the walking aids used by the patient. Once identified and evaluated, policies can be implemented to prevent patient falls in the hospital. Sixth target patient safety The above are guidelines for healthcare institutions, especially hospitals, which must be implemented in policies to create patient safety. The implementation of these patient safety goals has also been agreed upon as a reference for patient safety which is constantly being evaluated. Not only evaluation but the six must also be applied about assessing patient safety standards which are usually referred to as hospital accreditation.

Accreditation is carried out by the Hospital Accreditation Commission (KARS). Thus, all hospitals in Indonesia are also required to

occupy these 6 targets to achieve patient safety.

III. RESULT

TABLE 1. FREQUENCY DISTRIBUTION OF PATIENT SAFETY

Patient Safety	<i>f</i>	%
Not done	24	34,3
Done	46	65,7
Total	70	100

TABLE 2. FREQUENCY DISTRIBUTION OF RESPONDENTS BASED ON COMPLETENESS OF PRE-ANESTHESIA ASSESSMENT

Completeness of pre-anesthesia assessment	<i>f</i>	%
Incomplete	8	11,4
Complete	62	88,6
Total	70	100

TABLE 3. RELATIONSHIP BETWEEN COMPLETENESS OF PRE-ANESTHESIA ASSESSMENT AND PATIENT SAFETY

Pre-anesthesia assessment	Patient Safety						P-value
	Not Good		Good		Total		
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
Incomplete	24	38.7	38	61.3	62	100	0,076
Complete	0	0	8	100	8	100	
Total	24	38.7	46	61.3	70	100	

From table 3 it can be seen that the percentage of respondents to the completeness of the pre-anesthesia assessment was incomplete with poor patient safety (38,7%). The statistical test results obtained $p = 0,076$, so it can be concluded that there is no significant relationship between the Completeness of the Pre-Anesthesia Assessment and patient safety in the Operating Room of RSI Siti Rahmah Padang.

IV. DISCUSSION

Based on the results of the study it was found that more than half (65,7%) of patient safety was well done. Hospital patient safety is a system in which 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 the occurrence of risks and preventing injuries caused by mistakes due to carrying out an action or not taking action that should be taken (Regulation of the Minister of Health No. 1691 of 2011 concerning Hospital Patient Safety Chapter 1 Article 1 No. 1). The evaluation of the implementation of patient safety management in the treatment room of the Pangkep regional general hospital, it showed that out of 73 respondents, 73 (100%) respondents had identified patients, 73 (100%) respondents had effective communication, increasing drug safety by 54 (76%) of respondents who had carried out drug safety and who did not do 19 respondents (24%), accuracy of patient right location, right patient, right operation 73 (100%) respondents, reduced risk of infection 73 (100%) respondents, Reduction of the risk of patients falling by 73 (100%) respondents.¹⁸

Patient identification is the process of recording correct patient data so that it can establish and equate the data with the individual concerned. Identification was carried out from registration to discharge from the hospital. Based on the results of the study, it was shown that respondents in the patient identification category were carried out, namely as many as 62 respondents with a percentage (88,6%) and for the category not carried out, namely (11,4%). The results of this study are in line with research conducted by Iswati (2013) where the application of targets using quantitative analysis found that 95,7% of nurses had implemented patient safety goals properly. However, more intensive socialization is still needed to identify patients using at least two patient identities.

Effective communication is carried out with a percentage (78,6%) and for the category

not carried out (21,4%). The results showed that more than half of the nurses had properly verified the accuracy of communication verbally or via telephone. When communicating with the doctor by telephone, the nurse has prepared paper to record all the doctor's instructions and reconfirm what the nurse has recorded. Likewise, when communicating verbally or visiting a doctor, if the doctor's writing is unclear, the nurse confirms or asks for instructions given by the doctor. One of the reasons that communication between nurses and patients sometimes leads to misunderstandings is that no conformity is carried out in the field and what is recommended by health regulations. So sometimes many patients' families complain about what nurses and medical staff do at certain hospitals. In the communication carried out, of course, there must be more intense personal communication between medical personnel and patients so that misunderstandings do not occur between the two.

Precautions for drugs that need to be watched out for are carried out with a percentage (70%) and for the category not carried out, namely (30%). The results of observations made with several nurses revealed that from a policy point of view there were already policies related to SOPs for drug safety that needed to be watched out for (High-Alert) but socialization had not been implemented optimally. It is because of this lack of socialization that nurses do not know what the right course of action is for High Alert drugs. However, the placement of High Alert medicines and concentrated electrolytes is kept in a separate place and not in the patient care unit, but in the dispensary for non-emergency cases.

Certainty on the Right Location, Right Procedure, and Right Patient Operations was carried out with a percentage (80%) and for the category not carried out, namely (20%). Before carrying out the operation,

identification must be carried out again regarding the correctness of the laboratory results, including the X-ray results that the patient brought. If the patient is an outpatient then he will prepare it himself and if the patient is an inpatient then the nurse will prepare everything. A sign will be given if the operation concerns the left and right, then in the operating room, a file will be re-checked. Only then will premedication be carried out, namely giving a sedative and then taking to the operating room and the team of doctors will do a time out or stop for a moment to communicate with each other that the identity of the patient to be operated on is correct and then make sure the operation requires blood or not, then the patient is infectious or no. If all is done then a time-out is carried out, in this condition the patient's condition is still awake so he knows he will be carrying out this action. After the patient is asleep the performed. operation or surgery, and during the operation you have to pay attention to the amount of gauze and whether the instruments used for the operation are sterile or not, then it is calculated whether there are complications or not in the patient after everything is confirmed, then surgery is carried out. After the operation, the team checked out again, asked about the patient's condition, and re-checked the amount of gauze before use and after use, it had to be the same, all instruments were also counted, and then the patient was transferred.

Infection risk reduction was carried out with a percentage (62,9%) and for the category that was not carried out, namely (37,1%). The data mentioned above are by the results of interviews and observations conducted by the author, it can be obtained the result that the easiest way to reduce the risk of infection related to health services is by washing hands. Because hand washing is considered one of the most important steps to reduce the transmission of microorganisms and prevent infection for more than 150 years. The patient safety committee included this hand-

washing culture as one of the programs that were contested and had once been contested until it was made into a song. Wash your hands before touching the patient, before taking action, after contact with the patient's bodily fluids, after contact with the patient and after touching the patient's environment. Wash your hands according to the procedure with running water for 40-60 seconds and with alcohol for 20-30 seconds. To maintain patient safety, in the world of health it is recommended to be healthy and clean before coming into contact with patients. This guideline provides guidance for health workers in hospitals and other health facilities in carrying out infection prevention and control in services for patients suffering from airborne infectious diseases (airborne).

Fall risk reduction is carried out with a percentage (70%) and for the category not carried out (30%). A fall is a sudden, uncontrolled, unexpected event that results in the body being thrown to the floor or something else, but does not include a fall caused by violence or other expected action. All patients who will enter will be screened first. If there is no risk, the patient will only be full up, and for high-risk patients they will be given a yellow identity bracelet indicating that the patient is at high risk of falling. The patient's family also plays a role in accompanying his family who are being treated because the existing nursing staff is felt to be lacking to handle the large number of patients. The steps taken by the hospital and the nurses are procedures directed by the world of health, namely by first identifying each patient.

V. CONCLUSIONS AND RECOMENDATIONS

This study concluded that there was no significant relationship between the completeness of the pre-anesthesia assessment and patient safety in the Operating Room of RSI Siti Rahmah Padang. To improve the implementation of pre-anesthesia assessments, hospitals need to

review the completeness of filling out pre-anesthesia assessments by anesthetists before patients are operated on, to prevent errors in improving patient safety. Prepare facilities and infrastructure for the needs of patient safety programs in accordance with accreditation standards.

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