

The Role Of The Anaesthetist As A Care Provider In Perianesthesia In The Operating Room At The Hospital

^{1*}Emanuel Heatan Lewar, ²Putu Inge Ruth Suantika

^{1,2} Institut Teknologi dan Kesehatan Bali, Bali, Indonesia

* Correspondence author: yustinaindrayana@yahoo.com

ABSTRACT

Introduction: Perianesthesia nurses are health professionals with specific abilities to care, treat, assist and protect patients after undergoing diagnostic or therapeutic procedures. They work closely with anesthesiologists to manage and monitor patients before, during and after anaesthetic procedures. The conditions in this practice area have a confusing role in providing anesthetic management care to patients who are unable to help themselves in anesthesia, especially in perianesthesia. Therefore, it is very important to research the role of the anesthesiologist as a care provider for perianesthesia in the operating room. **Objective:** The purpose of this study was to identify the role of anaesthetists as care providers for perianesthesia in the operating room. **Methods:** This is a descriptive exploratory research with a qualitative approach. This research consists of two stages; data collection in the first stage was carried out through in-depth interviews with anaesthetists working in the Wangaya General Hospital Denpasar operating room. In the second stage, we triangulated the data from anesthesiologists as decision-makers or doctors in charge of administering anesthesia to patients to ensure that the obtained data is consistent, convergent and valid. Qualitative data analysis is inductive; analysis is based on the obtained data, and then the data is searched repeatedly with triangulation techniques; the writing is done through narrative methods. **Results:** This study showed that anaesthetists at Wangaya Hospital with an educational background of Diploma III and Diploma IV Anaesthesia Nursing, and Diploma III Nursing with anaesthesiology training with Specialty Registrars, administer anaesthesia or become the care provider in pre-anaesthesia, intra-anaesthesia and post-anaesthesia based on scientific, and professional standards of anaesthesiology. **Conclusion :** The anaesthetists can become care providers for perianesthesia in the operating room, which can be used as the first step by other researchers for further research on the effect of anaesthetic care in anaesthesia patient safety.

ABSTRAK

Latar belakang: Perawat anestesi merupakan tenaga profesional kesehatan yang mempunyai kemampuan khusus berperan merawat, memelihara, membantu dan melindungi seseorang karena sakit, yang menjalani prosedur diagnostik atau terapeutik, yang bekerja sama dengan ahli anestesi untuk mengelola dan monitor pasien sebelum, selama dan setelah prosedur anestesi. Kondisi di lahan praktik saat ini penata anestesi mengalami kesimpangsiuran peran dalam memberikan asuhan keperawatan anestesi kepada pasien yang tidak mampu menolong dirinya sendiri pada tindakan anestesi terutama pada perianestesi. Maka dari itu sangat penting melakukan penelitian peran penata anestesi sebagai care provider pada perianestesi di ruang operasi. **Tujuan:** Tujuan penelitian ini adalah mengidentifikasi peran penata anestesi sebagai care provider pada perianestesi di kamar operasi. **Metode:** Metodologi pada penelitian ini dengan rancangan penelitian ini adalah deskriptif eksploratif menggunakan pendekatan kualitatif. Penelitian ini terdiri dari dua tahap penelitian. Pengumpulan data pada tahap pertama dilakukan dengan wawancara mendalam (in-depth interview) pada penata anestesi yang bekerja di kamar operasi RSUD Wangaya Denpasar, Tahap kedua peneliti melakukan triangulasi untuk memperoleh data dari dokter spesialis anestesi sebagai decision maker atau dokter penanggung jawab pasien yang mengatur kegiatan pelayanan anestesi sehingga data yang diperoleh akan lebih konsisten, tuntas dan pasti. Analisa data kualitatif bersifat induktif yaitu suatu analisis berdasarkan data yang diperoleh, dan selanjutnya dicarikan data lagi secara berulang-ulang dengan teknik triangulasi dan penulisan dengan metode naratif. **Hasil :** Hasil penelitian ini yaitu Penata anestesi di RSUD Wangaya latar belakang pendidikan D III Keperawatan Anestesi dan D IV Keperawatan Anestesi, serta D III Keperawatan dengan pelatihan naesthesiologi yang memiliki STR Penata Anestesi sebagai tenaga pelaksana pemberi asuhan keperawatan anestesi atau care provider pada pra anestesi, intra anestesi dan post anestesi berdasarkan keilmuan, dan standar profesi penata anestesi. **Kesimpulan:** Dokter anestesi dapat menjadi pemberi asuhan perianestesi di ruang operasi, yang dapat digunakan sebagai langkah awal oleh peneliti lain untuk penelitian lebih lanjut mengenai pengaruh perawatan anestesi terhadap keselamatan pasien anestesi.

Submission : 11-07-2021

Revised : 28-09-2021

Accepted : 05-10-2021

Kata Kunci :
Anesthesiologist, care provider, perianaesthesia, and operating room

Keywords : Penata anestesi, care provider, perianestesi, dan Ruang operasi

Doi : 10.36858/jkds.v9i2.310

Introduction:

Anaesthesia service is a medical teamwork action led by an anesthesiologist with a Specialty Registrars (doctor participating in an anesthesiologist education program) and/or other doctors and anaesthetists (Dewi, 2019). In anaesthesia services, the anesthesiologist is in charge of the patient in anaesthesia, while anaesthetist is the caretaker for the patient's response to surgery with anaesthesia (Kremer et al., 2019) (Ririmasse et al., 2013).

Regulation from the Minister of Health of the Republic of Indonesia, No. 18 of 2016 concerning permits and the implementation of anaesthesia care practices stated that perianesthesia nurses are defined as anaesthesia administrators, health workers authorized to provide health services in the form of anaesthesia administration based on their expertise (Standards for Nurse Anesthesia Practice, 2012) (Saputri et al., 2020). A 2011 Japanese Society of Anesthesiologists article on The role of Certified Registered Nurse Anesthetists in the United States explains that anaesthetists in the United States perform a variety of anaesthetic care either under the supervision of an anesthesiologist in most states or independently in 16 states (Benis et al., 2018). However, there has been no research on the role of anaesthetists as team members in providing anaesthesia services in Indonesia (IFNA, 2016) (Fitri Haryanti et al., 2014).

We obtained preliminary data from government regulations explaining the duties, functions and authorities of anaesthetists (Kritis et al., 2020) (Indriasari, 2017). However, there is still confusion about the anaesthetists' roles when administering anaesthesia to patients, especially during perianesthesia. Therefore, it is pertinent to research the anaesthetists' role as a care provider for perianesthesia in the operating room.

Methods:

This study uses an exploratory, descriptive method with a qualitative approach through in-depth interview techniques to understand social phenomena from the participant's point of view to obtain an overview of the anaesthetists' role as a care provider in perianesthesia in the operating room. This research was conducted in the Operating Room of the Wangaya Hospital, Denpasar, in March – October 2020. The data in this study included qualitative data in narratives, descriptions, words and expressions from in-depth interviews. The main informants in this study were all anaesthetists in the operating room at the Wangaya Hospital, Denpasar, with the following criteria, graduates of Diploma III or Diploma IV in Anaesthesia Nursing, willing to be informants, actively participate and are directly involved in providing anaesthesia services in the operating room. The population in this study were anaesthetists with Diploma III or Diploma IV in Anaesthesia Nursing and willing to become informants. The sampling technique was done through a consecutive sampling technique. The researcher became the research tool in this qualitative research; the researcher is equipped and supported by interview guidelines and observation guidelines. Qualitative data analysis is inductive; analysis based on the obtained data, and then the data is searched repeatedly with triangulation techniques, the writing is done through narrative methods. We immediately conducted data analysis by enriching information, looking for relationships, comparing, finding patterns based on the original data, and not transforming it into numbers. This research has received ethical approval from the ethics committee of Wangaya Hospital with the number: No. 057/IX/KEP/RSW/2020.

Results:

The data were obtained from 5 (five) participants from 9 anaesthetists with an educational background in Anaesthesia

Nursing; the data from the fifth participant onwards became the data reached saturation.

The following are excerpts from the participants' statements about the role of the anaesthetists as a care provider in paranesthesia in the operating room of the Wangaya General Hospital Denpasar:

1) Conducting assessment and history taking on patients in pre-anaesthesia

P1: "To conduct an assessment like in the anaesthesiology poly, we visit one day before the operation..., and review again on the day of the operation in the operating room, and we will do that for emergency patients. The time is very short. We take notes on... history of allergies, history of using drugs or drugs, such as antihypertensive drugs, antidiabetics and others that can cause interactions with anaesthetic drugs, history of systemic diseases such as DM, hypertension, heart disease, lung disease, liver disease, bleeding disorders, etc. - other. We also ask about their fasting.. We ask about bad habits, such as smoking and consuming alcohol. Then to their daily lifestyle... do their physical examination,.. check their lab results, radiology, ECG if over 40 years old, check patient's administration, informed consents...."

P2: "First we conduct an assessment on pre-anaesthesia such as in the anaesthesiology poly, visit the patient one day before surgery, and review again on the D day in the operating room or patients in the emergency room, anaesthesia... history of drug allergy, history of certain drugs or drug use, history of systemic disease and others, recent meals, bad habits, such as smoking and consuming alcohol, daily activities.. physical examination, ...checking of supporting results such as lab, radiology or others... ... if you are more than 45 years old... check the ECG, check the completeness of the patient's status... informed consent...."

P3 : "In pre-anaesthesia...the first thing we do is usually an assessment,...in

pre-anaesthesia, it can be done at the anaesthesiology poly, those who work in the poly...or... when we visit the preoperative room and review it in the operating room when we want to do surgery..or emergency patients in the preparation room, ..we take anamnesis such as history of allergies, history of certain drug use, such as antihypertensive drugs, which can cause interactions with anaesthetic drugs, history of systemic diseases such as DM, hypertension, asthma, disorders blood and others, fasting, bad habits, such as smoking and consuming alcohol, daily activities.. physical examination, ...check lab results, radiology, ECG if necessary .., check administrative completeness such as informed consent....". "Then...determine the physical status of the ASA and the problem"..... "prepare anaesthesia equipment, anaesthesia machine, anaesthetic gas, anaesthetic drugs, emergency drugs...infusion fluids..... re-check the surgery schedule... type of surgery,".. " re-evaluate the evaluation pre-induction.... documentation..."

P4 : "In the pre-anaesthesia .. the assessment was carried out during the preoperative visit one day before surgery, and reviewed in the preparation room on the day of the surgery..or in the preparation room for emergency patients. The reviews are in the form of: ... history of allergies, history of certain drug use, history of systemic diseases such as DM, hypertension, asthma, heart disease, liver and other diseases, ..last meal they had before fasting .., bad habits, such as smoking and consuming alcohol, or drugs which hinders the interaction of anaesthetic drugs....the patient's daily activities.. 6 B physical examination, ...check lab results, radiology, etc....check ECG if necessary..at the age of 40 years, ..check administration.. informed consent

P5 : "At the beginning, the assessment is the stage of collecting data

on pre-anaesthesia in providing anaesthetic nursing care to patients requiring anaesthesia ... we take a history both on the patient or their family and also through a physical examination ... and supporting examinations ... then we conduct analysis, ..then determine the physical status of ASA so that health problems can be determined “... prepare STATICS anaesthesia equipment, anaesthesia machine, anaesthetic gas, anaesthetic drugs, emergency medicine...infusion fluids..... re-check the operation schedule... type of operation, “.....” re-evaluation on pre-induction.... and documentation in medical records.”

Interpretation: Conduct assessments, patient administration preparation; Examination of vital signs; Physical examination inspection, palpation, percussion and auscultation; Examination and assessment of the patient’s physical status; Analyze the results of the assessment and formulate patient problems; Evaluate pre-anaesthesia service management actions, evaluate independently or collaboratively; Document the results of the history/assessment; Prepare anaesthesia machines and monitors and make sure they are in good condition and ready to use; Control supplies of anaesthetic drugs, emergency drugs, anaesthetic gases and oxygen; Ensure the availability of anaesthesia infrastructure based on the schedule, time, and type of surgery

2) Role of Anaesthetists in Intra-Anaesthesia

P1: “What we do include providing pre drug, adjusting the position of surgery and anaesthesia, assisting dr. SpAn to provide anaesthetic drugs, preoxygenation, induction, intubation, anaesthetic maintenance and termination of anaesthesia, airway monitoring including ventilation, oxygen, circulation, temperature and pain.” Re-checking

the equipment and drug according to the anaesthetic technique”...”...documenting in the anaesthesia record about drugs, fluids, anaesthetic actions”... ”...we also conduct the delegated work from dr.SpAn to perform general anaesthesia until the end of the anaesthetic action;. administering anaesthetics, installing mechanical ventilation devices; giving nebulization, documenting which we will sign together.. so there is the signature of the anaesthetists and the anesthesiologist.”

P2 : “Intra-anaesthesia, namely giving predrug, adjusting the position and then accompanying dr. SpAn to provide anaesthesia, airway monitoring includes ventilation, oxygen, circulation, temperature and ...” re-checking anaesthesia equipment such as STATICS, anaesthesia machines, anesthetic drugs and gases as well as oxygen on whether they’re ready to use or not”...” documenting the patient’s progress, drugs used according to the anesthetic technique, intravenous fluids, blood transfusions, types of anaesthesia and anaesthesia techniques on the anaesthesia surgical notes”... ”... we also do a lot of work for dr.SpAn to perform general anaesthesia until the end of the anaesthetic action;. administering anaesthetics, installing mechanical ventilation devices, giving nebulization, .., .. in this case, we work together with the doctors.

P3 : “What we do in intra-anesthesiology is by assisting the dr. SpAn to administer anaesthetic drugs, preoxygenation, induction, intubation, maintenance of anaesthetic drugs and termination of anaesthesia, airway monitoring including ventilation, oxygen, circulation, temperature and pain.....” re-checking the anaesthesia equipment such as STATICS, anaesthesia machines, anaesthetic drugs and gas as well as oxygen on whether it’s ready to use or not”...” documenting the patient’s progress, drugs used according to anaesthetic technique, intravenous fluids,

blood transfusions, types of anaesthesia and anaesthetic technique and documenting in the surgical anaesthesia note”... we also collaborate with dr. SpAn to carry out general anaesthesia until the end of anaesthesia;. administering anaesthetics, installing mechanical ventilation devices; nebulization.

P4 : “What we often do here is intra-anesthesiology, namely accompanying dr. SpAn or we are delegated the authority to provide anaesthesia, airway monitoring including ventilation, oxygen, circulation, temperature and pain.. re-checking anaesthesia equipment, anaesthesia machines, drugs and anesthetic gases as well as checking whether the oxygen is ready to use or not”...” document the patient’s progress, drugs used according to anesthetic techniques, intravenous fluids, blood transfusions and types of anaesthesia and anesthetic techniques into the anaesthesia notes”...we also conduct the delegated task from dr.SpAn to perform general anaesthesia until the end of the anaesthetic action;. administering anaesthetics, installing mechanical ventilation devices, giving nebulization, ..this is a form of collaboration.. so we reported it to dr. SpAn during the anaesthesia service...

P5 : “What we often do here is intra-anaesthesia, namely accompanying dr. SpAn or we are delegated the authority to carry out anaesthesia until the end of anaesthesia according to the instructions of Dr. SpAn.; Airway monitoring includes ventilation, oxygen, circulation, temperature and pain.... monitoring equipment and drugs following the anaesthetic technique plan; documentation of all actions taken... overcoming the complications that arise;maintenance of the airway; ..installation of mechanical ventilation devices; installation of nebulizers; termination of anaesthetic action; and documentation in medical records.

Interpretation: The role of the anaesthetists in intra-anesthetic services consists of: Monitoring the general condition of the patient thoroughly and correctly; Monitoring equipment and drugs in accordance with the anaesthetic technique planning; Documenting all actions properly and correctly. In addition, the anesthesiologist also performs some delegated work and would have authority to assist the anaesthesia service, which includes: Performing anaesthesia following the anaesthesiologist's instructions; Installation of non-invasive monitoring tools; Install invasive monitoring devices; Administration of anaesthetic drugs; Overcome the complications that arise; Maintenance of the airway; Installation of mechanical ventilation devices; Installation of nebulizers; termination of anaesthetic action; and Documentation in medical records

3) Role of Anesthesiologist in Post-Anaesthesia

P1: “In post-anaesthesia, I accompany dr.SpAn to give post-anaesthesia pain drugs and other drugs according to dr. SpAn’s instructions; monitor patients after regional anaesthesia or general anaesthesia, including airway, ventilation, oxygen, circulation, temperature and pain; monitoring equipment and drugs following the anaesthetic technique plan; documenting all actions taken.... evaluating the results of the insertion of an epidural catheter and regional anaesthesia; ...or general anaesthesia; implementing actions in dealing with emergency conditions; documenting the use of drugs and medical devices used; and maintenance of equipment so that it is ready for use in the next anesthetic procedure.”

P2 : “In post-anaesthesia, we conduct activities like accompanying dr. SpAn to give post-anaesthesia pain drugs, and other drugs according to dr. SpAn’s

instructions; monitoring of patients after regional anaesthesia or general anaesthesia, including airway, ventilation, oxygen, circulation, temperature and pain; monitoring equipment and drugs following the anaesthetic technique plan; documenting all actions taken.... evaluating the results of the insertion of an epidural catheter and regional anaesthesia; ...or general anaesthesia; implementing actions in dealing with emergency conditions; documenting the use of drugs and medical devices used; and performing maintenance of anaesthetic equipment so that it is ready for use.”

P 3: “In post-anaesthesia, we conduct activities like accompanying dr. SpAn to give post-anaesthesia pain medication, and other drugs according to dr. SpAn’s instructions; monitoring patients after regional anaesthesia or general anaesthesia, including airway, ventilation, oxygen, circulation, temperature and pain; monitoring equipment and drugs following the anaesthetic technique plan; documenting all actions taken.... evaluating the results of the insertion of an epidural catheter and regional anaesthesia; ...or general anaesthesia; implementing actions in dealing with emergency conditions; documenting the use of drugs and medical devices used; and performing maintenance of anaesthetic equipment so that it is ready for use.”

P4:“ “In post-anaesthesia, the activities carried out include assisting and collaborating with dr.SpAn to provide post-anaesthesia pain medication and other drugs according to dr. SpAn’s instructions; monitoring of patients after regional anaesthesia or general anaesthesia, including airway, ventilation, oxygen, circulation, temperature and pain; monitor equipment and drugs following the anaesthetic technique plan; documenting all actions taken.... evaluating the results of the epidural

catheter and regional anesthesia insertion; ...or general anaesthesia; implementing actions in dealing with emergency conditions; documenting the use of drugs and medical devices used; and performing maintenance of anaesthetic equipment so that it is ready for use.”

P 5 : In post-anaesthesia, the activities included assisting and collaborating with dr.SpAn in providing post-anaesthesia pain medication and other drugs according to dr.SpAn instructions; monitoring of patients after regional anaesthesia or general anaesthesia, including airway, ventilation, oxygen, circulation, temperature and pain; monitoring equipment and drugs following the anaesthetic technique plan; documentation of all actions taken.... evaluating the results of the insertion of an epidural catheter and regional anaesthesia; ...or general anaesthesia; implementing actions in dealing with emergency conditions; documenting the use of drugs and medical devices used; and performing maintenance of anaesthesia equipment so that it is ready for use.”

Interpretation: The role of anaesthetists in post-anaesthesia administration services includes: Planning post-anaesthesia administration actions; Managing pain according to the anesthesiologist’s instructions; Monitoring the patient’s condition after insertion of an epidural catheter; Monitoring the patient’s condition after administration of regional anaesthetic drugs; Monitoring the patient’s condition after the administration of general anaesthetic drugs; Evaluating the outcome of the patient’s condition after the insertion of an epidural catheter; Evaluating the results of epidural catheter insertion and regional anaesthesia treatment; Evaluating the results of epidural catheter insertion and general anaesthesia treatment; Implementing actions in dealing with emergency

conditions; Documenting the use of drugs and medical devices used, and Maintaining equipment to ensure it is ready for use in the next anaesthetic procedure.

Discussion:

The role of the anaesthetist in pre-anaesthesia services is to conduct a pre-anaesthesia management assessment which includes: patient administration preparation; Examination of vital signs; Other necessary examinations according to the patient's needs either by inspection, palpation, or auscultation; Examination and assessment of the patient's physical status; Analyze the results of the assessment and formulate patient problems; Evaluation of pre-anaesthesia service management actions, evaluating independently or collaboratively; Documenting the results of the history/assessment; Thoroughly check the preparation of the anaesthesia machine for each use and ensure that the machine and monitor are in good working order and ready for use; Controlling the supply of medicines and fluids every day to ensure that all medicines, both anesthetics and emergency medicines, are available according to hospital standards; Ensure the availability of anaesthesia infrastructure based on the schedule, time, and type of surgery. (IFNA, 2016)(Standards for Nurse Anesthesia Practice, 2012)(Pedoman Penyelenggaraan Pelayanan Anestesiologi Dan Terapi Intensif Di Rumah Sakit, 2011)

The role of the anaesthetists in the intra-anaesthesia service consists of Monitoring equipment and drugs following the planning of the anaesthetic technique; Monitoring the general condition of the patient thoroughly and correctly; Documenting all actions taken so that all actions are recorded properly and correctly.(Standards for Nurse Anesthesia Practice, 2012)(Yusniawati et al., 2018) Additionally, the anaesthetists also have the delegated authority to assist anaesthesia services which include: Performing anaesthesia following the instructions of an

anesthesiologist; Installing non-invasive monitoring tools; Performing installation of invasive monitoring devices; Administering anaesthetic drugs; Overcoming complications that arise; Maintaining the airway; Installing mechanical ventilation devices; Installing nebulizers; terminating anaesthetic action, and Documenting medical records(Yusniawati, 2018)(Standards for Nurse Anesthesia Practice, 2012)(Standards for Nurse Anesthesia Practice, 2012)

The role of the anaesthetists in post-anaesthesia administration services includes: Planning post-anaesthesia management actions; Managing pain according to the anesthesiologist's instructions; Monitoring the patient's condition after insertion of an epidural catheter; Monitoring the patient's condition after administration of regional anaesthetic drugs; Monitoring the patient's condition after the administration of general anaesthetic drugs; Evaluating the outcome of the patient's condition after the insertion of an epidural catheter; Evaluating the results of epidural catheter insertion and regional anaesthesia treatment; Evaluating the results of epidural catheter insertion and general anaesthesia treatment; Implementing actions in dealing with emergency conditions; Documenting the use of drugs and medical devices used, and Maintaining equipment so that it is ready for use in the next anaesthetic procedure.(Pallant, 2010)(Matsusaki & Sakai, 2011)(Lebe et al., 2014)

Conclusion:

Anaesthetists at Wangaya Hospital with an educational background of Diploma III and Diploma IV Anaesthesia Nursing, and Diploma III Nursing with anaesthesiology training with Specialty Registrars, administer anaesthesia or become the care provider in pre-anaesthesia, intra-anaesthesia and post-anaesthesia based on scientific, and professional standards of anaesthesiology as well as applicable laws and regulations. So the anaesthetists can become care providers for perianesthesia in the operating room, which can be used as the first step by other

researchers for further research on the effect of anaesthetic care in anaesthesia patient safety.

References:

- Benis, A., Norea, A., & Barkan, R. (2018). Risk and disaster management: From planning and expertise to smart, intelligent, and adaptive systems. *Studies in Health Technology and Informatics*. <https://doi.org/10.3233/978-1-61499-852-5-286>
- Dewi, N. (2019). Pengelolaan Hipotermi Pasien Sectio Caesarea Dengan Spinal Anestesi Melalui Pemberian Selimut Alumunium Foil Di Ibs Rs http://repository.poltekkes-smg.ac.id/index.php?p=show_detail&id=18278&keywords=
- Fitri Haryanti, Hasri, E. T., & Hartriyanti, Y. (2014). Praktik keselamatan pasien bedah di rumah sakit daerah. *Jurnal Manajemen Pelayanan Kesehatan*, 17(1), 182–187.
- IFNA. (2016). *International Federation of Surveyors*. *Australian Surveyor*, 35(3), 295–298. <https://doi.org/10.1080/00050326.1990.10438685>
- Indriasari, J. (2017). Naskah publikasi hubungan beban kerja perawat ruang operasi dengan kejadian low back pain pada perawat ruang operasi di RSUD kota Yogyakarta. <http://eprints.poltekkesjogja.ac.id/413/>
- Kremer, M. J., Hirsch, M., Geisz-Everson, M., Wilbanks, B. A., Clayton, B. A., Boust, R. R., & Jordan, L. (2019). Preventable closed claims in the AANA foundation closed malpractice claims database. *AANA Journal*, 87(6), 468–476.
- Kritis, T., Terapis, K., Mulut, G., Tindakan, P., & Siregar, I. H. Y. (2020). Critical Review of the Authority of Oral Dental Therapists in Providing Medical Action Services Based on Regulation of the Minister of Health Number 20 of 2016. 6(2), 176–182.
- Lebe, S. S., Mulej, M., Kefan, X., & Jia, L. (2014). Early-warning management of regional tourism emergency: a holistic approach. *Kybernetes*.
- Matsusaki, T., & Sakai, T. (2011). The role of certified registered nurse anesthetists in the United States. *Journal of Anesthesia*, 25(5), 734–740.
- Pallant, J. (2010). *Survival Manual*. In McGraw-Hill Education.
- Pedoman Penyelenggaraan Pelayanan Anestesiologi dan Terapi Intensif di Rumah Sakit, Pub. L. No. NOMOR 519/MENKES/PER/III/2011 (2011).
- Ririmasse, H., Widjajanto, E., & Roebijoso, J. (2013). Effects of Mapalus Value Culture on Human Resources Behavior and Performance of Hospital Management (General Center Hospital Kandou and General Hospital Bethesda Tomohon , Indonesia). *Research on Humanities and Social Sciences*, 3(14), 15–22. www.iiste.org/Journals/index.php/RHSS/article/download/7919/7672
- Saputri, N. A. S., Prayogi, A. S., & Mardalena, I. (2020). Waiting Time Pre Anestesi Berhubungan dengan Tingkat Kecemasan Pasien Pre Operasi. 16(1), 16–22.
- Yusniawati, Y. N. P. (2018). Analisis Faktor Yang Berhubungan Dengan Keterlambatan Waktu Tiba Pasien Dengan Sindrom Koroner Akut Di Instalasi Gawat Darurat Pelayanan Jantung Terpadu Rsup Sanglah Denpasar. Universitas Brawijaya.
- Yusniawati, Y. N. P., Yueniwati, Y., & Kartikawatiningsih, D. (2018). Knowledge and Socioeconomic Status as The Factors of Pre-hospital Delay in Patients with Acute Coronary Syndrome. *Research Journal of Life Science*, 5(1), 34–41.