



## SURGICAL SAFETY CHECKLIST APPLICATION COMPLIANCE ANALYSIS BASED ON THEORY OF PLANNED BEHAVIOR IN SURGICAL PATIENT: LITERATURE REVIEWS

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### ABSTRACT

**Background:** *Surgical safety checklist* is a tool or system that is very important in implementing patient safety during surgery, especially in the operating room. One of the patient safety programs in central surgical installation is the application of a surgical safety checklist which is recognized as important by the surgical team in reducing postoperative mortality and morbidity and increasing patient safety. **Objective:** This study aims to determine compliance with filling out a surgical safety checklist based on the theory of planned behavior in the Central Surgery Installation (CSI). **Method:** The research method uses a literature review, by using Garuda, PubMed and Science Direct database searches. Selection of literature with manuscripts according to research topics with a cross sectional design. **Results:** A literature search showed that adherence in filling out the surgical safety checklist increased patient safety in Central Surgical Installation (CSI) programs and reduced surgical mortality worldwide. **Conclusion:** It can be concluded from this study that there is an analysis of adherence to the application of surgical safety checklists based on the theory of planned behavior for surgical patients in the Central Surgery Installation. **Suggestion:** The surgical team is expected to comply with and implement Standard Operating Procedures (SOP) by using a surgical safety checklist as an important tool or facility in implementing patient safety, especially in the operating room.

**Keywords :** surgical safety checklist, patient safety, surgical team

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### INTRODUCTION

The Central Surgery Installation (IBS) is a surgical service room that has a high risk and accident rate, if the implementation does not prioritize patient safety, patient readiness, and surgical procedures (Sukasih & Suharyanto, 2013). In the IBS room there are officers who are divided into several teams who have different roles when carrying out their work, but what needs to be considered is patient safety (Mamesah et al., 2018).

Patient safety is a variable to measure and evaluate the quality of nursing services that have an impact on health services. The patient safety program aims to reduce the number of unexpected events (KTD) that often occur in patients while hospitalized so that it is very detrimental to both the patient himself and the hospital (Setyani et al., 2017)

The World Health Organization (WHO, 2017) states that patient safety is a health problem experienced by the global community and is considered serious. This



medical error can be caused by system factors and human factors. Adverse patient safety incidents were related to surgical procedures (27%), medication errors (18.3%) and healthcare related infections (12.2%) (WHO, 2017). According to previous research conducted (Salmasi et al., 2015) in his study of six countries in Southeast Asia: Indonesia, Singapore, Malaysia, Vietnam, the Philippines and Thailand, stated that the lack of data exposure was related to the incidence of medical errors in almost 50% of countries. in South East Asia. This is evidence of a weakness in the reporting system in the region.

In the 2019 report on Patient Safety Incidents in Indonesia, data on 38% of near miss events (KNC), 31% of non-injury (KTC) events, 31% of unwanted events (KTD) (Aizah & Andayanie, 2020). In Indonesia there are 1,227 accredited hospitals, but there were 668 incidents which were only reported in 2016 nationally (Habibah & Dhamanti, 2020).

One of the patient safety programs is a surgical safety checklist. In June 2009, WHO spearheaded the launch of the surgical safety checklist (Weiser & Haynes, 2018). Result of studies that the mechanism for using a surgical safety checklist is carried out by involving multiprofessions (doctor surgery, doctor anesthesiologists, anesthesiologists, and surgical nurses). With use and compliance with filling out the safety checklist differentm resulted in reduced mortality and morbidity post-surgery (Ramsay et al., 2019). According to (T. Wang et al., 2018) obesity is one factor that can cause difficulties in perioperative management.

Meanwhile, according to (Riri & Budipratama, 2021). Obese patients with a Mallampati score of 3 or more can experience an increased risk of three times more difficult intubation compared to normal people, therefore an anesthesiologist

must know the pathophysiological changes that occur in obese patients so that they can manage in overcoming difficult intubation. during processanesthesia. Compliance with the implementation of this surgical safety checklist has a very positive impact in reducing the rate of hospitalization complications from 11% to 7% and mortality from 1.5 to 0.8%. This surgical safety checklist is designed to prevent death from perioperative errors (Westman et al., 2018). Implementation of surgical safety checklist in hospital showed a positive effect after surgery. This survey shows that after carrying out a surgical safety checklist procedure, postoperative complications decreased by 0.003% per year (Ramsay et al., 2019).

Based on the background presentation, WHO in 2017 said patient safety incidents were a problem experienced by the global community and were taken seriously. The biggest adverse safety incident was related to surgical procedures by 27%. From these data the researcher is interested in conducting research using the literature study method or literature review on the Effect of Compliance in Completing Surgical Safety Checklists on Patient Safety in Central Surgical Installations.

## METHOD

This study uses the method of literature review or literature review, by collecting and evaluating research that is in accordance with the research topic, namely "The Effect of Compliance with Filling in the Surgical Safety Checklist on Patient Safety in the Central Surgery Installation". The research design used in this study is cross sectional. Sources of data taken in this study came from journals in Garuda, Pubmed and Science Direct. For problem analysis in this study, the PICOST format was used (P = Population; I = Intervention; C = Comparison; O = Outcome; S = Study; T = Time).



**Table 1.** Problem Analysis (PICOST)

Population	General Anesthesia
Population	Surgical Team
Intervention/Exposure	Surgical filling compliance <i>safetychecklist</i>
comparison	-
output	<i>Patient Safety</i> in IBS
Study	<i>Cross Sectionals</i>
time	2017 - 2022

Literature search selection consists of 4 stages namely identification, screening, eligibility and acceptance. The identification stage is to search for articles or journals that match the time specified in the inclusion criteria in each database, namely Garuda, PubMed, Science Direct, the number of articles or journals obtained is written (n = 1040). The search results are checked for duplication, the purpose is to find out whether there are articles or journals that are the same or not. After that the same article or journal is issued, the results are written (n = 737). The screening stage was carried out by elimination according to the inclusion and exclusion criteria then the number was written (n = 733), the results of the elimination were written (n = 4). The articles obtained are then subjected to a feasibility test. The feasibility test phase using the JBI Critical

Appraisal obtained the number of articles or journals (n = 4) then eliminated and the results were written (n = 0). The next stage is acceptance, the number of articles or journals received is written (n = 4).

## RESULTS AND DISCUSSION

Based on a literature review search from the Garuda, Pubmed and Science Direct databases, a number of results were obtained 4 articles have been screened based on the inclusion criteria set by the researchers and due diligence has been carried out using the JBI Critical Appraisal with a cross-sectional format. The results of this study were collected and summarized in a format based on title, author, year of publication, country, research objectives, type of research, research methods, population and number of samples, results.

**Table 2.** List of Journals Analyzed

No	Title/ author/ Year/Grade	Research purposes
1.	Nurse Compliance in the Implementation of the Surgical Safety Checklist Against Incident Ponek Patient Safety at Semarang Hospital / Susi Nurhayati, Suwandi / 2019 /Indonesian/Indonesian.	To find out the relationship between room nurse compliance internal surgery implementation of a surgical safety checklist for ponek patient safety incidents in the central operating room of Tugurejo General Hospital Semarang.
2	Relationship between Patient Safety Knowledge Level and Nurse Compliance in Implementation <i>Surgical Safety Checklist</i> in the Pre-Operation Room Installation Operating Room at RSD Mangusada Badung/ Putu Ayu	To determine the relationship between the level of patient safety knowledge and nurse compliance in applying the surgical safety checklist in the Pre-Operation Room, Installation Operation Room, RSD



No	Title/ author/ Year/Grade	Research purposes
3	Mega Agnihortry, I Made Dwie Pradnya Susila1, AA Ngurah Nara Kusuma/2020/Bahasa Indonesia/Indonesia. <i>Implementation of the surgical safety checklist at a tertiary academic center: Impact on safety culture and patient outcomes/Areg Zingiryan a, Jennifer L. Paruch b, Turner M. Osler c , Neil H. Hyman/2017/English/America.</i>	Mangusada Badung.  To evaluate whether the use of surgical safety checklist will reduce postoperative complications in tertiary academic centres
4	Impact of the Norwegian National Patient Safety Program on implementation of the WHO Surgical Safety Checklist/ Arvid Steinar Haugen,Monica Wammen Nortvedt, Charles Vincent, Stig Harthug, Eirik Søfteland, Nick Sevdalis, Geir Egil Eide/2020/Bahasa implementation of a surgical safety checklist for ponek patient safety incidents in the central operating room of Tugurejo General Hospital Semarang. To determine the relationship between the level of patient safety knowledge and nurse compliance in applying the surgical safety checklist in the Pre-Operation Room, Installation Operation Room, RSD Mangusada Badung.	To examine the impact of the implementation of the Norwegian national patient safety campaign and surgical safety checklist program on safety culture.

### Surgical Safety Checklist Surgical safety checklist

Is a tool or system in the form of a checklist that is used in the operating room in monitoring patient safety during this surgical procedure. It is the responsibility of the surgical team consisting of (doctors, surgical nurses, anesthesiologists) to fill in each part of the surgical safety checklist according to (Ramsay et al. ., 2019). The surgical safety checklist is divided into three phases, namely (sign in, time out, sign out) where the sign in phase or before induction of anesthesia is carried out by the anesthesiologist, anesthesiologist nurse, and the patient which consists of checking the patient's identity, the procedure to be performed and things to do, and other points related to anesthesia anesthesia. Furthermore, in the time-out phase or immediately before the skin incision where in this phase the patient's name, the roles of all team members and all important aspects

of the surgery itself were mentioned as well as the expected time during the operation and the possibility of unexpected blood loss were all communicated. Finally, the sign out phase or the so-called termination of anesthesia where in this phase an examination of consumable surgical instruments and equipment damage is carried out, calculating the number of gauze used and postoperative completion according to the World Health Organization 2009 (Woodman & Walker, 2018).

The factors causing the high postoperative mortality rate are operational safety standards, facilities, infrastructure, and human resources that do not meet the standard operating procedures contained in the surgical safety checklist and the surgical team's disobedience in implementing the surgical safety checklist according to (Nepogodiev et al. al., 2019). Surgical team knowledge of

English/Norwegian. Based on the review results of 4 journals the, obtained discussion as follows:

Patient safety is important, because if the surgical team's knowledge of patient safety is lacking, it will clearly affect the performance of the surgical team itself in implementing surgical safety *checklist* in the operating room (Notoadmojo, 2014). This is in line with research (Agnihortry et al., 2021) which explains that the surgical team's knowledge of patient safety affects the surgical team's compliance in implementing the surgical safety checklist as evidenced by data from 23 respondents who have good knowledge, namely 69.6% are categorized as compliant in implementing surgical safety checklist, whereas with respondents who have sufficient knowledge where out of 18 respondents none are categorized as compliant in applying the surgical safety checklist. It can be concluded that good knowledge about patient safety will make the surgical team more aware of adherence to the application of the surgical safety checklist.

### **Patient Safety**

*Patient safety* is a basic principle and this is important in health services. According to the Indonesian Ministry of Health (2008) in the National Hospital Patient Safety Guide, the first step in a patient safety program in hospitals is to build a patient safety culture or raise awareness among all employees of the importance of safety values in hospitals (Najihah, 2018).

The compliance of the surgical team in implementing the surgical safety checklist is influenced by the existence of policies and the existence of standard operating procedures in the hospital so that it makes it an obligation for the surgical team to fill in the surgical safety checklist according to (Sandrawati, 2013). This is regulated in the law article 27 paragraph (1)

PP Number 47 of 2021 concerning Implementation of the Hospital Sector, where this point discusses the obligation of hospitals to provide safe, quality, anti-discrimination and effective health services by prioritizing the interests of patients in accordance with hospital service standards.

This is in line with research conducted by (Nurhayati, 2019) which said that the operating room nurses at Tugurejo Hospital Semarang were mostly compliant in implementing the surgical safety checklist, namely 28 respondents (93.3%), and a small proportion were disobedient in implementing surgical safety checklist as many as 2 respondents (6.7%). It was explained that 28 respondents filled out the checklist items without missing a beat. This is due to the attitudes and perceptions of the surgical team in implementing a patient safety culture by adhering to the application of the surgical safety checklist in the operating room, as well as the existence of strict operational standard policies in the hospital.

The perception of patient safety culture is one of the factors that influence the performance of the surgical team in complying with the use of the surgical safety checklist. Perceived compliance is a psychological behavior in the form of a response or reaction to stimuli or stimuli from outside the individual so that giving a response is very dependent on the characteristics or other factors that influence it. This is in line with research conducted (Haugen et al., 2020) that analyzes the relationship between the perceptions of the operating room surgical team about culture safety affect the level of compliance with the surgical safety checklist by 13%, from 75% there was an increase to 88% from 2009-2010 and 2017. And also research (Zingiryan et al., 2017) said that in his research study it was found that adherence to the application of the surgical safety checklist in the survey to the surgical team at the treiser academic center



demonstrated the perceived improvement in patient safety culture.

This is supported by the statement of the theory that perception is the final process of observation which is initiated by the sensing process, namely the process of receiving a stimulus by sensing, then the individual has attention, then it is passed on to the brain, and only then is the individual aware of something called perception. The perception of the surgical team as a health service in the field is very decisive in the culture of patient safety so that patient safety is created (Dewa, 2017).

Based on the data obtained after carrying out the surgical safety checklist, there was a decrease in postoperative mortality from 1.2% to 0.92%, and also a decrease in the length of stay from 5.2 days to 4.7 days according to (de Jager et al. ., 2019). In the period of application before and after the use of the surgical safety checklist, it showed a decrease of 32%. This was found in the results of a survey assessing the perception of the surgical team in the operating room regarding the surgical safety checklist, 76% of surgeons, 86% of anesthetists, and 88% of the surgical team believed the surgical safety checklist would have a positive impact on patient safety according to (Gitelis et al., 2017).

The four articles that have been reviewed are related to the author's research, which discusses the effect of adherence to the application of a surgical safety checklist on patient safety. It is known that the application of the surgical safety checklist is one of the patient safety programs, safe surgery saves lives, part of WHO's efforts to reduce the number of surgical deaths worldwide. Compliance with surgical safety checklist is required seriousness in its application, therefore it can be said that several factors such as knowledge of patient safety, perceptions and attitudes of the surgical team influence its application. To improve patient safety

culture, teamwork and surgical team communication in the operating room is needed obedience in implement use surgical safety checklist (Haugen et al., 2020).

## CONCLUSION

Based on the results of a review conducted from the 4 journals, it is known that the surgical safety checklist is a system that uses a checklist in monitoring patient safety and is a very important tool or facility in implementing patient safety or patient safety, especially in the operating room. There is an influence of adherence to the use of surgical safety checklists on increasing patient safety in the central surgical installation room and has a positive impact on increasing effective communication among surgical teams. Implementation of a surgical safety checklist can help prevent errors and reduce the incidence of mortality and morbidity during surgical services.

## SUGGESTION

Based on the results of the literature search, the researchers suggest to the knowledge of anesthetic nursing in order to be able to hold lessons related to the importance of complying with the application of a surgical safety checklist for patient safety in the operating room.

For Hospitals it is hoped that the hospital can pay attention to the importance of SOP adherence to the application of surgical safety checklists effectively so as to reduce morbidity and mortality rates in hospitals.

For the Surgical Team (Doctors, Nurses, Anesthesiologists) hoped that will comply with and implement Standard Operating Procedures (SOP) by using a surgical safety checklist as an important tool or facility in implementing patient safety, especially in the operating room. Safety checklist on patient safety in the IBS room with other variables.



## REFERENCES

- Al Fadjar, AH (2018). Source Management Power Man And Motivation. Sidoarjo: IndomediaReferences. <https://opac.erpunpas.go.id/Detail.aspx?id=1121513>
- Abbott, TEF, Ahmad, T., Phull, MK, Fowler, AJ, Hewson, R., Biccard, BM, Chew, MS, Gillies, M., Pearse, RM, Beattie, S., Clavie n, PA, Demartines, N., Fleisher, L. A., Grocott, M., Haddow, J., Hoefl, A., Holt, P., Moreno, R., Pritchard, N., ... Wildes, T. (2018). The surgical safety checklist and patient outcomes after surgery: a prospective observational cohort study, systematic review and meta-analysis. *British Journals of Anaesthesia*, 120(1), 146–155. <https://doi.org/10.1016/j.bja.2017.08.002>
- Agnihortry, PAM, Susila, IMDP, & kusuma, A A N. N. (2021). The Relationship between Patient Safety Knowledge Level and Nurse Compliance in the Application of Surgical Safety Checklist in the Pre-Operation Room, Operating Room Installation at Rsd Mangusada Badung. *PANNMED Scientific Journal (Pharmacist, Analyst, Nurse, Nutrition, Midwifery, Environment, Dentist)*, 16(2), 352–357. <https://doi.org/10.36911/pannmed.v16i2.1118>
- Aizah, A., & Andayanie, E. (2020). Factors Associated with the Target Implementation of Patient Safety for Room Nurses stay HOSPITAL LAMADUKELLENG 2020 Regulation of the Minister of Health of the Republic Indonesia Number. 11 of 2017 concerning patient safety, through services that implement safety standards. 1(2), 148–156. <https://jurnal.fkm.umi.ac.id/index.php/woph/article/view/81/53>
- Al-Qahtani, USA (2017). The surgical safety checklist: Results of implementation in otorhinolaryngology. *Omani Medical Journal*, 32(1), 27–30. <https://doi.org/10.5001/omj.2017.05>
- Bardan, R. (2017). Analysis of the Implementation of Patient Safety at the Inchie Abdoel Moeis Regional General Hospital. 87(1,2), 149–200. [http://digilib.unhas.ac.id/uploaded\\_files/temporary/DigitalCollection/pdf](http://digilib.unhas.ac.id/uploaded_files/temporary/DigitalCollection/pdf)
- De Jager, E., Gunnarsson, R., & Ho, YH (2019). Implementation of the World Health Organization Surgical Safety Checklist Correlates with Reduced Surgical Mortality and Length of Hospital Admission in a High-Income Country. *World Journal of Surgery*, 43(1), 117–124. <https://doi.org/10.1007/s00268-018-4703-x>
- Dewa, P. (2017). Correlation between the level of knowledge about the application of patient safety and the perception of the application of patient safety by nurses at RSUD dr. Soediran Mangoen Soemarro Wonogiri. In *Nursing (Vol. 1)*. [https://eprints.undip.ac.id/55121/1/Pr oposal\\_Dhewa\\_22020112130067.pdf](https://eprints.undip.ac.id/55121/1/Pr oposal_Dhewa_22020112130067.pdf)
- Gitelis, ME, Kaczynski, A., Shear, T., Deshur, M., Beig, M., Sefa, M., Silverstein, J., & Ujiki, M. (2017).



- Increasing compliance with the World Health Organization Surgical Safety Checklist—A regional health system's *experience*. *American Journals of surgery*, 214(1), 7–13. <https://doi.org/10.1016/j.amjsurg.2016.07.024>
- Habibah, T., & Dhamanti, I. (2020). Review of Literature Factors that Obstacle Reporting of Patient Safety Incidents in Hospitals: Literature Review. 9(4), 449–460. <http://jurnal.fk.unand.ac.id/index.php/jka/aarticles/download/1460/1140>
- Haugen, AS, Sjøfteland, E., Sevdalis, N., Eide, GE, Nortvedt, MW, Vincent, C., & Harthug, S. (2020). Impact of the Norwegian National Patient Safety Program on implementation of the WHO Surgical Safety Checklist and on perioperative safety culture. *BMJ Open Quality*, 9(3). <https://doi.org/10.1136/bmjopen-2020-000966>
- Hamdani, & Haikal. (2017). The ins and outs of the Import Export Trade (seventh). East Jakarta: bushindo. <https://library.poltekpel-sby.ac.id/apps/opac/detail-opac?id=2474>
- Irmawati, NE, & Anggorowati, A. (2017). Surgical Checklist as an Effort to Improve Patient Safety. *Journal of Health Studies*, 1(2), 40–48. <https://doi.org/10.31101/jhes.184>
- IBI. (2018). Culture Starts from the Top Building a Compliance Culture (first). Jakarta: Gramedia. <https://ebooks.gramedia.com/books/culture-starts-from-the-top-build-culture-compliance?buffer=1>
- Ito, R. (2019). Connection Level Knowledge Nurse About Identification Inpatient Safety With its Implementation in the Inpatient Room. 8(5), 55. <http://journal.stikeshangtuah-sby.ac.id/index.php/JIK/article/view/62>
- Karniawan, W. (2020). Compliance Analysis of the Application of Surgical Safety Checklist Based on Theory of Planned Behavior in Surgical Patients at Andi Makkasau Hospital, ParePare City. 58–74. <http://repository.unhas.ac.id/id/eprint/305/>
- Lombogia, A., Rottie, J., & Karundeng, M. (2016). The Relationship between Behavior and Nurses' Ability in Implementing Patient Safety in the Acute Room of the Emergency Room at Rsup Prof. Dr. RD Kandou Manado. *UNSRAT Journal of Nursing*, 4(2), 111324. <https://ejournal.unsrat.ac.id/index.php/jkp/articles/views/12916>
- Mamesah, A., Nursalam, & Tandipajung, T. (2018). The Relationship of Surgical Team Motivation With Obedience Use of the Surgical Safety Checklist in Room Surgery RSU. 8(1), 2018. <http://jurnal.unsrittomohon.ac.id/index.php?journal=jurnalprint&page=article&op=download&path%5B%5D=369&path%5B%5D=335>
- Melfianora. (2019). Writing Scientific Papers with Literature Study. *Open Science Framework*, 1–3. <https://osf.io/efmc2> <https://osf.io/gfe9w/download>
- Moola S, Munn Z, Tufanaru C, Aromataris E, Sears K, Sfetcu R, Currie M, Kotimah, et al (2023)





- Qureshi R, Mattis P., Lisy K, MP-F. (2017). Checklist for analytical cross-sectional studies. Joanna Briggs Institute Reviewer's Manual, 1–7.<http://joannabriggs.org/research/critical-appraisal-tools>.
- Najihah. (2018). And Patient Safety Incidents In Hospitals: Literature Review. 3, 1–8.<https://ejournal.unair.ac.id/MGK/article/view/23327>
- Nepogodiev, D., Martin, J., Biccard, B., Makupe, A., Bhangu, A., Ademuyiwa, A., Adisa, AO, Aguilera, ML, Chakrabortee, S., Fitzgerald, JE, Ghosh, D., Glasbey, JC, Harrison, EM, Ingabire, JCA, Salem, H., Lapitan, MC, Lawani, I., Lissauer, D., Magill, L., ... Morton, DG (2019). Global burden of postoperative death. *The Lancet*, 393(10170),401