

# THE ASSOCIATION OF SURGICAL SAFETY AND PATIENT SAFETY INCIDENT

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## Abstract

Failure to perform surgical safety could have been caused several unwanted cases and result in disability and even death. This studied aims to analyze the association of surgical safety and patient safety incident. This research is a quantitative research with observational analytic and the studied design used was cross-sectional. The population used was all surgery patients in the operating room of dr. Sayidiman Magetan and the number of research samples was 54 respondents and the sampling method used in this studied was the purposive sampling. The researched variables was the implementation of surgical safety and patient safety incident. The researched instrument used a checklist with data analysis using the chi-square. the implementation of surgical safety shows mostly good results and there was no patient safety incident (87%), while the implementation of surgical safety shows sufficient results and there was no patient safety incident (7,4%) and patient safety incidents occur (1,9%). The implementation of surgical safety was poorly implemented and there was no patient safety incident (3,7%). The results of statistical analysis using chi-square obtained p-value (0,000) <  $\alpha$  (0,05): the results showed a significant association regarding the implementation of surgical safety with the patient safety incident. The implementation of surgical safety shows that there was a significant association with incidents of patient safety. Surgical safety was carried out very well so that the findings of a patient safety incident was minimal.

**Keywords:** Surgical Safety; Patient Safety Incident; Surgical; Patient Safety; Incident

**Article info:** Sending on March 26, 2021; Revision on May 05, 2021; Accepted on May 20, 2021

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## 1. Introduction

Surgery was an integral part of medical services carried out by a team of experts in the operating room and every surgical activity have had a communication instrument that aims to maintained and ensure patient safety, namely a safety checklist which was relatively easy to implement, but because something was sometimes not done properly (Willassen, Jacobsen, and Tveiten 2018). Surgical safety that was not implemented properly was influenced by various factors such as worked routines, tight operating schedules, busyness, and lack of personnel (Spagnolo et al. 2013; WAPS 2009). Failure to practiced safe surgery could've result in some unwanted cases and could've result in disability and even death (Aranaz Ostáriz et al. 2020).

An estimated 11% of the disease burden suffered by people in the world requires surgical treatment and/or anesthetic management, and some studies had even estimated that up to 30% of the disease burden suffered by people in the world (Bhandarkar et al. 2021). Researched in 56 countries from 192 member countries of who estimated that

234. Two million surgical procedures performed annually had the potential for complications and death (Weiser et al. 2010). The estimated number of surgical operations was estimated at 313 million annually and approximately 143 million were performed annually worldwide to save lived and prevent disability (Meara et al. 2015). The number of people aged 75 years and over have had increased from 14. 9% to 22. 9% and it was estimated that by 2030 those in this age range would experience a significant increase in terms of performing surgery every year (Fowler et al. 2019).

The WHO Surgical Safety Checklist Have Had Been Designed Efficiently And Effectively To Have Been Used By The Surgical Team In The Operating Room So That Additional Knowledge And Periodic Socialization For Operating Room Personnel Were Required To Increase Their Knowledge, Acceptance, And Ability To Apply The Who Surgical Safety Checklist On A Daily Basis (Mahendradhata et al. 2017). While performing surgery could've save many lived, surgery also carries risks associated with complications and even death (Lewis, Dirksen, and Bucher 2014; Widjajanto

2020). Surgical errors that were wrong or most often result from communication problems, lack of information, or incorrect information (Rodziewicz and Hipskind 2019). Communication breakdowns were a common reason for errors in the operating room, as well as during pre and postoperative care (Methangkool et al. 2019).

The high number of complications and deaths due to surgery causes surgery to have been a global health concern. The use of a structured checklist in the surgical process was very effective because it standardizes human performance in ensuring procedures were followed (Weiser et al. 2010). Standard surgical procedures for patients undergoing surgery were an important step in preventing adverse events (Tutiany, Lindawati, and Krisanti 2017). Good communication between staff and the application of well-executed standard operating procedures could've minimize errors, operational failures, and other patient safety issues (Bardan 2017). The implementation of surgical safety procedures starting from signing in, time out, and signing out must have been done for all patients who undergo surgery to prevent unwanted events before, during, and after surgery

## 2. Method

This research is a quantitative research with observational analytic and the studied design used was cross-sectional. This research was conducted in the operating room of dr. Sayidiman Magetan on Desember 2020. The population used was all patients who underwent surgery in the operating room of dr. Sayidiman Magetan and the number of research samples was 54 respondents and the sampling method used in this study was the purposive sampling. The variables in this study were surgical safety and patient safety incident. The instrument in this study used a questionnaire include the age, gender, type of operation, unit of operation, implementation surgical safety and patient safety incident. Bivariate analysis in this study used chi-square test with a significance level set in this study was  $p < 0.05$ .

## 3. Results and Discussion

The results showed that most of the respondents was 31-40 years old (53.7%), was female (66.7%), with the type of elective surgery (62.9%), and went from obstetric unit (59.3%) as the data shown in table 1

The results showed that most of the implementation of surgical safety have had been done well (87%) and almost all patient safety incidents had no incidents (94.4%) as the data shown in table 2.

The implementation of surgical safety showed mostly good results (no incidents) and no patient safety incidents (87%), while the implementation of surgical safety showed sufficient results and there

was no patient safety incidents (7.4%) and incidents (1.9%). The implementation of surgical safety was poor and there was no incidents of patient safety (3.7%). The results of statistical analysis using chi-square obtained p-value ( $0.000 < \alpha (0.05)$ ), as the data shown in table 3.

Table 1. Distribution of respondents by age, gender, type of operation and unit of operation

No.	Characteristics	Frequency (f)	Percentage (%)
1.	Age		
	a. < 20	9	16,7
	b. 20 – 30	8	14,8
	c. 31 – 40	29	53,7
	d. > 40	8	14,8
2.	Gender		
	a. Male	18	33,3
	b. Female	36	66,7
3.	Type of operation		
	a. Elective	34	62,9
	b. Emergency	20	37,1
4.	Unit of operation		
	a. Obgyn	32	59,3
	b. General Surgery	10	18,5
	c. Orthopedics	12	22,2

Table 2. Distribution result of the implementation surgical safety and patient safety incident

No.	Characteristics	Frequency (f)	Percentage (%)
1.	Implementation of Surgical Safety		
	a. Good	47	87,0
	b. Sufficient	5	9,3
	c. Less	2	3,7
2.	Patient Safety Incidents		
	a. No Incidents	51	94,4
	b. Incidents	3	5,6

### Implementation of Surgical Safety

The results showed that the implementation of surgical safety was done well (87%) and the implementation of surgical safety was sufficient (9.3%) and less (3.7%). The results showed that most of the surgeries performed at the time of data collection was elective surgery (62.9%) with most of them being obstetric patients (59.3%).

WHO has undertaken a number of global and regional initiatives aimed at surgical safety. This checklist identifies three phases in the surgical process. Before induction of the "sign in" anesthesia, before the skin side "time out", and before the patient leaves the operating room "sign out." In each phase the checklist coordinator must confirm that the surgical team has completed the checklist filling task before the operation begins (Machin 2016). The

surgical safety checklist was a relatively simple and promising strategy for managing surgical patient safety and the surgical safety checklist increases the detection of potential safety hazards, surgical complications and improves communication between surgical staff (Treadwell, Lucas, and Tsou 2014). Who encourages the adoption of safety standards for operating room safety checklists to minimize surgical side effects and improved patient care, communication, teamwork, and safety (Tostes, Haracemiw, and Mai 2016).

Surgical safety was used to monitor patient safety and was a very important tool or means, especially in the application of patient safety or patient safety in the operating room. A surgical safety

checklist was just a stepped or procedure for carrying out an operation, so many other factors could've affect the occurrence of an unwanted event. The steps taken by the surgical team for patients who would be operated on in improving patient safety during surgical procedures, preventing the occurrence of errors in operating locations, or operating procedure errors and reducing complications of death due to surgery were in line with the goals in safety surgery. In general, the surgical safety checklist have had been implemented well, but this application was still possible to caused patient safety incidents such as infection.

**Table 3.** Cross tabulation between the implementation of surgical safety and patient safety incident

Implementation of Surgical Safety	Patient Safety Incidents				Total (N)	Percentage (%)
	No Incidents		Incidents			
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)		
Good	47	87,0	0	0	47	87,0
Sufficient	4	7,4	1	1,9	5	9,3
Less	0	0	2	3,7	2	3,7
Total	51	94,4	3	5,6	54	100

*Chi – Square*  $p(0,000) < \alpha(0,05)$

#### Patient Safety Incidents

The results showed that almost all patient safety incidents was not found (94. 4%) and only 5. 6% was found to have been patient safety incidents. The results showed that most of the patients who underwent surgery at the time of data collection was women (66. 7%) with an age range of 31-40 years (53. 7%).

Patient safety was an emerging health care discipline with growing complexity in the health care system and increasing patient harm in health care facilities. This aims to prevent and reduce the risks, mistakes and dangers that occur to patients during the provision of health services (WHO 2019). The success of the surgery and patient health care in general depends on effective teamwork and the presence of patient safety incidents or unwanted incidents in surgery often stem from human error (Healey, Undre, and Vincent 2006; Sexton et al. 2006). Teamwork was the main principle of a medical professional in carrying out surgical services to patients because surgical services were high-reliability organizations (Tostes, Haracemiw, and Mai 2016).

The results showed that the proper and accurate implementation of surgical safety could've prevent patient safety incidents. Accidents in patients were thought to occur due to a lack of communication factors between officers, so the surgical safety checklist was expected to have been a means of communication that could've equalize perceptions of conditions and things related to patients from the beginning to the end of the

operation. Another factor that could've caused incidents of patient safety was the lack of specialized personnel to handle patients in the postoperative recovery room.

#### Implementation of Surgical Safety and Patient Safety Incident

The results showed that the implementation of surgical safety as a whole was carried out well (87%) and the results of the implementation of surgical safety also showed results that was in line with the incidence of patient safety incidents which indicated that almost all of them had no patient safety incidents (94. 4%).

The surgery checklist was a practical and simple communication tool in ensuring patient safety in the preoperative, intraoperative, and postoperative stages, was carried out on time, and shows better benefits for patient safety (Blomberg, Bisholt, and Lindwall 2018). The safety of surgical procedures that would reduce morbidity and mortality rates for surgical patients, safety and comfort in performing surgical procedures before, during, and after surgery for health workers, implementing patient safety programs in hospitals (Soule 2018). Medical errors were a serious health problem and were a serious issue for health services. Medical error was a difficult problem because it was difficult to revealed the caused of the error and even if it was found it have had various aspects of the problem, both to provide consistent corrective solutions and minimize the possibility of recurring events. However, by recognizing unwanted events occurring, learning

from them, and working to prevent them, patient safety could've have been improved (Rodziewicz and Hipskind 2019). The application of the action procedure of a medical action appropriately and under the established procedure was a guaranteed for a patient to received services. The implementation of an appropriate procedure helps the team of nurses and doctors to accelerate the patient's healing process, which was due to the application of the right action, which automatically minimizes the incidence or the presence of a complication or impact after the action. Patient safety incidents were the most important things to have been one of the priorities in the provision of patient health services.

The results showed that most of the implementation of surgical safety was good and there was no incidents of patient safety (87%). These results were supported by the results of researched analysis with the obtained p-value  $(0.000) < \alpha (0.05)$ , which means that there was a relationship between the implementation of surgical safety and the incidence of patient safety.

Surgical safety procedures (surgical safety) was a system that made hospitals safer in patient care and this system prevents injuries (Rodziewicz and Hipskind 2019). Application of surgical safety checklist was intended to facilitate effective communication in surgical procedures that improved the quality of nursing services and increase efforts to improved patient safety in the operating room before surgery, during surgery, and after surgery (Kisacik and Cigerci 2019). Patient safety aims to prevent and reduce risks, errors, and other risks that occur to patients during the provision of medical services (WHO 2019).

The WHO checklist is made simple, is a practical tool that can be used by any surgical team around the world in an efficient and timely manner, can be applied before surgery, surgery, and post-surgery. Good acceptance of the implementation of the checklist among operating room personnel should be accompanied by proper knowledge of when the checklist should be used, so as not to jeopardize the effective and correct administration and use of the checklist in the operating room. In this case, awareness of all parties and complete knowledge of why and how the checklist should be used is required. Acceptance and knowledge are some of the factors that might determine compliance with using the checklist. When a patient's safety was compromised, or even if someone was closed to having an incident, it was necessary that the nurse or doctor needs to knew and immediately took appropriate action to resolve it. Patient safety was a system by which the hospital made patient care safer. This system prevents injury caused by wrong behavior or failure to did what was supposed to have been. Surgical safety practices that were carried out correctly would not lead to incidents of patient safety, but poor implementation could've lead to unwanted

injuries / incidents and if not handled immediately could've result in serious injury or even death.

#### 4. Conclusions and suggestions

The implementation of surgical safety shows that there was a significant relationship with the incidence of patient safety. Surgical safety was carried out very well so that the findings of a patient safety incident were minimal. The application of surgical safety have had been carried out with good readiness and sufficient knowledge of the operating room personnel so that incidents or unwanted incidents of surgical activities were not found or were very minimal. It was hoped that the application of surgical safety would continued to have been carried out properly so that it could've help improved patient safety practices and patient satisfaction

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