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### RESEARCH ARTICLE

#### THE IMPLEMENTATION OF FIVE STEPS TO SAVE SURGERY PRACTICE IN IMPROVING THE CHECKLIST WRITING OBEDIENCE IN RSKB ANNUR YOGYAKARTA.

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#### Abstract

The aims of this research is to provide an overview about the checklist safer surgery writing obedience in RSKB ANNUR Yogyakarta. Quasi experiment is used in this research. The used-design experiment is one-group pretest-posttest design where there should be pretest after treatment and posttest after treatment. There is a little deviation among mean, standard deviation, and standard error. It can be concluded that the surgery team has been obedient in implementing pre and post safety surgery. The r correlation is 0.061 showing the contribution of checklist safety surgery socialization. The obedience level is 0.37% while the rest is caused by another factor. The significant value is 0,709 (Sig.>0,05) showing that there is no correlation between socialization of pre and post checklist safety surgery and the surgery team obedience. The implementation of briefing with pre-Safety Surgery Checklist cannot be correlated since the standard error is 0.000. The sign-in implementation with in-Safety Surgery Checklist is more effective with Sig value (p) is 0,031 (p<0,050) where it means that Ho is denied. There is significant difference in pre and post safety surgery writing. The implementation of time out with Safety Surgery Checklist in surgery is ineffective with the Sig (p) value is 0,323 (p>0,050) where it means that Ho is accepted so there is not significant difference between checklist time out obedience and pre-post safety surgery implementation. The debriefing implementation with in-Safety Surgery Checklist is ineffective since the Sig (p) value is 0,160 (p>0,050) where it means that Ho is accepted, so there is not significant difference between the obedience of checklist sign out writing before pre and post safety surgery implementation. The Five Steps To Safer Surgery implementation in RS ANNUR Yogyakarta is ineffective since the Sig (p) value is 0,164 (p>0,050) where it means that Ho is accepted, so there is not significant difference between surgery team's obedience and pre and post safety surgery implementation.

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#### Introduction:-

Surgery is an important part in health service because it is used to save the one's life, prevent the deficiency and complication. There are several factors that can cause surgery wound infection, such as patient, time, surgery

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operator, other medical staffs, operation theater, and operation tools. One of surgery room management is the use of a WHO surgical safety checklist that functions to equalize perception, communication, and cooperation among surgery team. WHO Surgical safety checklist is a way used by surgery team to improve surgery safety, decrease death rate and decrease surgery's disability. RSKB ANNUR Yogyakarta has performed higher enough surgery every month in 2012, more or less 60 surgery per month. RSKB ANNUR Yogyakarta has applied simple checklist safety surgery, consisting of sign in, time out dan sign out. It will revise checklist safety surgery by adopting NHS National Patient Safety Agency (2010) to improve its service quality in operation theater. There are 5 (five) steps to save in safety surgery namely briefing, sign in, time out, sign out, dan debriefing.

### Methods:-

Quasi experiment is used in this research. The used-design experiment is one-group pretest-posttest design where there should be pretest after treatment and posttest after treatment. The subjects of this research are the hospital director, the surgeon, the anesthesist, and the surgery nurse. There are two objects in this research. First, qualitative object – safe surgery, appropriate procedure, appropriate patient. Second, medical record history. The population in this research are surgery team that consist of 4 surgeons, 2 anesthesist, and 8 nurses. The samples are 14 people that consist of surgeons, anesthesists, and surgery nurse. It uses *total sampling*. The independent variable is the implementation of *five steps to safer surgery*. The dependent variable is the obedience of checklist writing. The data analysis in this research is using T-test to recognize the difference between pre and post socialization of safety surgery checklist.

### Result and Discussion:-

In this study, the officer / operations team given surgery safety checklist that was made before explained how to fill in and benefit from the checklist to be tested to 40 patients were operated on within two weeks. Then the researchers socializing the benefits and how to fill out the checklist to the officer / operations team on Monday, April 1, 2013 with an invitation number 072A / RS-IN AN / IV / 2013. Next, the researchers asked the officer / operations teams perform surgery safety checklist. The start of the briefing, sign in, time out, sign debriefing for use at 40 patients who underwent surgery. Obtained following studies:

#### Univariate analysis:-

**Table 1:-** Frequency Distribution Based Compliance Officer in Charge Safety Briefing Checklist Surgery Pre and Post on Apply Safety Surgery in RSKB ANNUR Yogyakarta.

Activity	Frequency			
	Pre		Post	
	Yes	No	Yes	No
Briefing	40 (100%)	0	40 (100%)	0

The officers carrying out briefings and briefing checklist fill each operation will be performed for 40 patients (100%).

**Table 2:-** Frequency Distribution Based Compliance Officer in Charge Safety Sign in Checklist Surgery Pre and Post on Apply Safety Surgery in RSKB ANNUR Yogyakarta

Activity (Sign in)	Frequency			
	Pre		Post	
	Yes (1)	No (0)	Yes (1)	No (0)
Confirm the patient's name	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Confirm of the diagnosis patient	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Confirm of the plan surgery patient	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Informed consent	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Marking the surgical site	0 (0%)	40 (100%)	0 (0%)	40 (100%)
oximetry function and ready	37 (92,5%)	3 (7,5%)	40 (100%)	0 (0%)
Anesthesia	40 (100%)	0 (0%)	40 (100%)	0 (0%)
A history of allergic disease	40 (100%)	0 (0%)	40 (100%)	0 (0%)
A history of asthma disease	40 (100%)	0 (0%)	40 (100%)	0 (0%)
A history of diabetic mellitus disease	40 (100%)	0 (0%)	40 (100%)	0 (0%)

A history of hypertension disease	40 (100%)	0 (0%)	40 (100%)	0 (0%)
evaluation of the airway and respiratory risk	40 (100%)	0 (0%)	39 (97,5%)	1(2,5%)
Dental amalgams	39 (97,5%)	1 (2,5%)	40 (100%)	0 (0%)
Preparatory operations and the prevention of blood loss	17 (42,5%)	23 (57,5%)	4 (10%)	36 (90%)

The show at the time pre and post implementation of safety surgery, the officer carrying out sign in and fill out a checklist on the 14-phase sign in for item replenishment confirm the name of the patient, confirm the patient's diagnosis, confirmed the operation plan, informed consent, anesthesia, medical history (allergies, asthma, diabetes, hypertension), the evaluation of the risk of airway and breathing each will perform surgery on 40 patients (100%). However, for the items in the marked site checklis charging operation pre and post implementation of the safety officer did not perform charging surgery checklist for 40 patients (100%), the clerk also only fill in the checklist item oximetry is installed and working as many as 37 (92.5%) before the application safety surgery and up to 40 (100%) after the implementation of safety surgery.

For marking the location of the operation in RSKB ANNUR Yogyakarta never done because the majority of its operating properties closed and in the case of urology location is certain and not arbitrary. Thus, no need for marking the location of the operation on every operation for the case of urology. Officers are still unsure on what action to do the marking and tagging need not be performed.

Officers had attended a workshop on hospital accreditation conducted by Hospital Accreditation Committee who explained that for any action on the surgery should do the marking on the location of the area of operation. However, until now there is still no agreement on marking the location of the area of operation in every operation in RSKB ANNUR Yogyakarta.

Charging checklist for dental amalgams item is only performed for 39 patients (97.5%) before the application of safety surgery and 40 patients (100%) after the application of safety surgery. To fill in the item checklist preparation operations and prevention of blood loss, before the application of safety required surgery, 17 patients (42.5%) and after the implementation of safety surgery 4 (10%).

Not being filled checklist on items oximetry is installed and working as many as three patients (7.5%) and the installation of dentures in 1 patient (2.5%) before being applied safety officer surgery because there is a chance missed when charging the checklist. According to information from the person in charge of the operating room, all patients undergoing surgery always performed installation oximetry. Most operations performed in RSKB ANNUR has closed nature although there are some cases of open surgery such as sectio alta, Nephrectomy, laparotomy never was done in the hospital. Thus, not all the actions undertaken to prevent the risk of blood loss due to the risk of a small loss in surgery closed.

**Table 3:-** Frequency Distribution Based Compliance Officer in Charge Safety Time Out Checklist Surgery Pre and Post on Apply Safety Surgery in RSKB ANNUR Yogyakarta

Activity (Time Out)	Frequency			
	Pre		Post	
	Yes (1)	No (0)	Yes (1)	No (0)
Readiness personnel (operators, anesthesiologists, nurses instruments, nurses circulation)	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Confirm the name of the patient, the patient's diagnosis and the name of the operating procedures	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Readiness surgical instrument	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Readiness of basic instruments	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Readiness special instruments	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Readiness anesthesia instruments	40 (100%)	0 (0%)	40 (100%)	0 (0%)

Antibiotic prophylaxis	40 (100%)	0 (0%)	39 (97,5%)	1(2,5 %)
Imaging has been shown	40 (100%)	0 (0%)	40 (100%)	0 (0%)
The operator-specific preparation	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Possible complications	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Special attention anesthesia	40 (100%)	0 (0%)	40 (100%)	0 (0%)

The show at the time before and after the implementation of safety surgery, the officer carrying out a time-out and fill the checklist every time out of operation for 40 patients (100%), with the exception of the filling checklist on items prophylactic antibiotics were 39 patients (97.5%).

Rules of prophylactic antibiotics for surgery patients given  $\leq 60$  minutes before surgery. However, this can not be done in any patient who underwent surgery due to the condition of patients who come in the day before surgery with the case of Urinary Tract Infection (UTI), then antibiotics are given at the time of presentation. Thus, at the time of surgery, the patient did not receive prophylactic antibiotics  $\leq 60$  minutes before surgery.

**Table 4:-** Frequency Distribution Based Compliance Officer in Charge Safety Sign Out Checklist Surgery Pre and Post on Apply Safety Surgery in RSKB ANNUR Yogyakarta

Activity (Sign Out)	Frequency			
	Pre		Pre	
	Yes (1)	No (0)	Yes (1)	No (0)
Patient's name	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Medical record number	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Have performed operations	39 (97,5%)	1(2,5%)	40 (100%)	0 (0%)
Diagnosis Post Surgery	39 (97,5%)	1(2,5%)	40 (100%)	0 (0%)
Completion of instrumen, sponge and needle	40 (100%)	0 (0%)	40 (100%)	0 (0%)
Specimens with labels	40 (100%)	0 (0%)	40 (100%)	0 (0%)

At the time before and after the implementation of safety surgery, the officer carrying out sign out and sign a checklist to fill out every once performed surgery on 40 patients (100%). Except for charging has performed surgery and postoperative diagnosis were 39 patients (97.5%) before the application of safety surgery. According to information from the person in charge of the operating room, ha is because officers are not thorough in filling surgery safety checklist.

#### Bivariate analysis

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-implementation of Safety Surgery (total)	31,23	40	,733	,116
	Post-implementation of Safety Surgery (total)	31,05	40	,316	,050

The average value of the results of the answers by the 40 respondents to 32 entries in the checklist with an average of 31.23 (pre implementation of safety surgery checklist) and 31.05 (post implementation of safety surgery checklist). Value standard deviation or deviations from the average response (Std. Deviation) was 0.733 (pre implementation of safety surgery checklist) and 0,316 (post implementation of safety surgery checklist) and the value of the error rate of the answers to the checklist (Std. Error Mean) is 0.116 (pre implementation of safety surgery checklist) and 0.50 (post implementation of safety surgery checklist). That is the difference in value of charging a checklist pre and post socializing is quite small.

Paired Samples Correlations			
		N	Sig.

Pair 1	Pre-implementation of Safety Surgery (total) & Post-implementation of Safety Surgery (total)	40	,061	,709
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Correlation ( $r$ ) rate is 0.061. It means that there is 0.37% contribution of checklist safety surgery socialization. The rest is caused by another factor. The significant value is 0.709 (Sig.>0,05). It means that there is no correlation between checklist safety surgery socialization and the staff's obedience pre and post safety surgery implementation.

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-implementation of Safety Surgery (total) – Post-implementation of Safety Surgery (total)	,175	,417	,066	-,075	,425	1,418	39	,164

The deviation value pre and post *safety surgery* implementation is (0,175). The standard deviation in obedience of pre and post *safety surgery* implementation is (0,417) in interval ((-0,75) – 0,425). It shows that there is a difference autonomy in trust for 95%. T-test shows that df is 39 with significant value(5% atau 0,05) and t table is (1,685). T value is (1,417) , so it can be concluded that (t table > t calculated) means that Ho is accepted. Value Sig (2-tailed) is (0,164), it means that the significant value  $p > 0,05$  so there is no difference obedience pre and post safety surgery implementation in surgery room in Rumah Sakit ANNUR Yogyakarta.

t-test analysis			
Post-implementation of <i>safety surgery</i> – pre-implementation <i>safety surgery</i>	Sig. (P)	Meaning	Conclusion
<i>briefing</i>	-	Incorrelated	<i>Briefing with Safety Surgery Checklist in pre-surgery can't be correlated with the standard error value (0,000)</i>
<i>sign in</i>	0,031	( $P < 0,05$ )	(Ha accepted/Ho denied), there is significant difference between pre and post checklist safety surgery
<i>time out</i>	0,323	( $P > 0,05$ )	(Ha denied/Ho accepted), there is no significant difference between pre and post checklist safety surgery
<i>sign out</i>	0,323	( $P > 0,05$ )	(Ha denied/Ho accepted), there is no significant difference between pre and post checklist safety surgery implementation
<i>debriefing</i>	0,160	( $P > 0,05$ )	(Ha denied/Ho accepted), there is no difference between pre and post checklist safety surgery implementation
<i>total</i>	0,164	( $P > 0,05$ )	(Ha denied/Ho accepted), there is no difference between pre and post checklist safety surgery implementation

An effective *briefing* is conducted in RSKB ANNUR to facilitate teamwork to perform surgery and to make the time more efficient in creating the safety surgery. Lingard *et al.* (2005) in his research shows that there is a checklist used as a guideline in pre-surgery discussion around 1 to 6 minutes before surgery to make a better and efficient

surgery. Paull, *et al* (2010) shows that pre-surgery briefing is related to the patient's safety. The obedience of prophylactic becomes higher after surgery checklist socialization.

The implementation of *sign in in surgery is effectively done in RSKB ANNUR*. It is found that there is no full-marked area in surgery because the surgery team is still doubt and not yet agree whether full-marked is need or not. From the workshop with KARS, it is suggested to mark area of surgery, but it is still a policy. Mis-site marking, mis-procedure, mis-operated patient are commonly caused by ineffective communication among surgery team, do not involve patient in site-marking, and no procedure to verify site-marking. Site-marking should be used consistantly in all hospitals it should be made by the one who performs surgery. It is also made when the patient is still awake and should be seen by patient until the patient is ready to be operated. (Kemenkes R.I., 2011).

Panasar, *et al* (2011) states that there are a lot of factors that cause mis-site marking surgery. It shows that there is interference in communication among the surgery team, especially in mis-site marking. Surgery checklist is an effective instrument used to prevent mis-surgery starting from mis-identification, mis-site marking, untuk mis-surgery position. *Time out* implementation is ineffective in RSKB ANNUR. It is caused by the difference time and alocation in giving prophylactic. There are a lot of cases show that the inpatient comes to the hospital with urinary tract infection, so patient is need to be given antibiotics. As a result, there is no need antibiotics in the next day surgery. Dale W, *et al* (2005) figures out that prophylactic antibiotics is used 1 hour before the first initiation on the skin can increase the infection on the wound. Antibiotics prophylactic should be given 60 minutes before initiation. Antibiotics prophylactic in surgery is the way how to prevent infection after surgery. Antibiotics can minimize infection in surgery, but it also can cause resistency to antimicrobial. (Munckhof & Wendy, 2005). Infection wound rate can be minimize by giving antibioticsprophylactic using *surgical safety checklist* guide pre-surgery. (Vries *et al.*, 2010).

*Sign out implementation with Safety Surgery Checklist* in surgery is effective conducted in RSKB ANNUR. The sign out is well-implemented in pre and post safety surgery chechecklist socialization where the staff considers how importance the sign out in implementing surgery. Gawande (2003) conducts a research that shows the impact of spons left in patient. As a result, re-operation is required here, one died. It can be concluded that strange things in pateint's body is really emergency condition that need seroius action. *Debriefing implementation with Safety Surgery Checklist is ineffective in RSKB ANNUR*

### Conclusion:-

The *Five Steps To Safer Surgery implementation* in RS ANNUR Yogyakarta is ineffective since the Sig (p) value is 0,164 ( $p > 0,050$ ) where it means that  $H_0$  is accepted, so there is not significant difference between surgery team's obedience and pre and post safety surgery implementation. The suggestion is required a commitment between director and safety surgery checklist staff. It is required policy and hospital standard operational procedure in implementing surgery safety checklist WHO in surgery procedure in the hospital. It is required periodically routine evaluation to improve standard service using *surgical safety checklist* WHO in surgery. It is required in house training or re-socialization about the implementation of *surgical safety checklist* WHO to surgery team (surgeons, anesthesists, and anesthesist staffs). It is required to point a nurse as an operator in impkementing *surgical safety checklist* WHO.

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