

Factors Related to the Completeness of Electronic Surgical Safety Checklist Documentation in Banyumas Public Hospital

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ABSTRACT

Background: Patient safety in surgery is a program established by the WHO and is a standard for accreditation by KARS, implementing the electronic surgical safety checklist. This has been proven to reduce patient safety incidents in the surgical room. Method: This quantitative research used a descriptive correlation design with a cross-sectional approach. A total sampling technique was employed, involving 34 surgical nurses in the Central Surgical Installation of RSUD Banyumas, who met the inclusion and exclusion criteria. The research instrument utilized an observation sheet based on the surgical safety checklist Standard Operating Procedure (SPO) at RSUD Banyumas. Data analysis was conducted using the chi-square test. Results: The results of the study revealed that the majority of nurses were male (70.6%), aged between 31-40 years (41.2%), and above 40 years (41.2%), with a DIII level of education (70.6%), and work experience of 1-5 years (44.1%), and they completed the electronic surgical safety checklist documentation (67.6%). Age, education level, and work experience correlate with the completeness of electronic surgical safety checklist documentation at RSUD Banyumas (p -value $\leq \alpha$). Conclusion: Age, education level, and work experience related to the completeness of electronic surgical safety checklist documentation at RSUD Banyumas.

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1. INTRODUCTION

Surgical service have become an essential component of healthcare worldwide[1]. Complications from surgical procedurs contribute significantly to injuries and deaths that should have been preventable. The world Health Organization (WHO) has established a set of safety standards that can be used worldwide, including the surgical safety checklist[2]. This is also included in the 2012 KARS accreditation standards, which cover patient safety goals[3]. Based on the post-trial implementation study of the WHO surgical safety checklist conducted in the same eight hospitals, there was a reduction in complications for emergency surgeries by 63.6%, a decrease in hospital deaths from surgeries from 3.7% to 1.4%, a reduction in surgical site infection (SSI) from 11.2% to 6.6%, and a decrease in blood loss of more than 500 ml from 20.2% to 13.2% [4].

The utilization of technology and information in medical records has continued to involve up to the present day. The implementation of electronic medical records in hospitals comes with various challenges, including user perceptions or healthcare professionals' attitude towards using them, as well as the shift in habits and work culture from paper-based to electronic systems[5]. There are several factors that can influence the completion of the

surgical safety checklist, including the age of the healthcare professionals, their level of education, work experience, motivation, attitude, and knowledge[6]. A consistent operating room nurse is needed to uphold attitudes and maintain a patient safety culture, along with a cohesive surgical team, to ensure the effective implementation of the surgical safety checklist[7].

The completeness of electronic Surgical Safety Checklist documentation is influenced by various factors, including age, level of education, and years of experience. Based on previous research, it was found that a good level of nurse knowledge (24.4%) was associated with a 90% compliance rate of the surgical team in implementing the Surgical Safety Checklist (SSC). When knowledge was rated as moderate (46.7%), the SSC implementation rate was 72.6%, while with low knowledge (53.8%), the SSC implementation rate dropped to 28.9% [8]. Based on this background, the researcher aims to investigate the factors associated with the completeness of electronic Surgical Safety Checklist documentation in Banyumas Public hospital.

The general objective of this research is to determine the factors associated with the completeness of electronic surgical safety checklist documentation in Banyumas Public hospital. The specific objectives of this research are: to identify the characteristics of the respondents, to assess the completeness of electronic surgical safety checklist documentation, to analyze the relationship between age, education level and work experience with the completeness of electronic surgical safety checklist documentation in Banyumas Public hospital.

The surgical safety checklist is divided into three phases: before anesthesia induction (sign in), the period after anesthesia induction and before incision (time out), and the period during or immediately after wound closure and before the patient leaves the operating room (sign out). In each phase, the checklist coordinator should be allowed to confirm that team has completed their tasks before proceeding with further activities[2].

2. RESEARCH METHOD

This quantitative research used a descriptive correlation design with a cross-sectional approach. A total sampling technique was employed, involving 34 surgical nurses in the Central Surgical Installation of RSUD Banyumas. The research instrument utilized an observation sheet based on the surgical safety checklist Standard Operating Procedure (SPO) at RSUD Banyumas. Data analysis was conducted using the chi-square test.

This research has received ethical approval from the ethics committee of RSUD Banyumas on April 17, 2023, with reference number 234/KEPK-RSUDBMS/IV/2023. This research was conducted at the Central Surgical Installation of RSUD Banyumas and was carried out from May 1st to May 31st, 2023. The researcher observed the electronic filling of the Surgical Safety Checklist and then evaluated the completeness, assessing the achievement of completeness through the RSUD Banyumas hospital information system (SIM).

3. RESULT AND DISCUSSIONS

3.1. Univariate

Table 1. Frequency Distribution of characteristics respondents in the Central Surgical Installation of RSUD Banyumas

Characteristics of respondents	F	%
Gender		
Male	24	70.6
Female	10	29.4
Age		
20 – 30 years	6	17.6
31 – 40 years	14	41.2
>40 years	14	41.2
Education level		
DIII	24	70.6
S1ners	10	29.4
Work experience		
1-5 years	15	44.1
6-10 years	5	14.7
>10 years	14	41.2

Based on table 1 above, it is known that the majority of nurses were male (70.6%), aged between 31-40 years (41.2%), and above 40 years (41.2%), with a DIII level of education (70.6%), and work experience of 1-5 years (44.1%).

Table 2. Frequency Distribution of completeness of electronic surgical safety checklist documentation at RSUD Banyumas

characteristics	F	%
Elektronic Surgical safety checklist		
Incomplete	11	32.4
Complete	23	67.6

Based on table 2 above, it is known that the majority of nurses completed the electronic surgical safety checklist documentation (67.6%).

3.2. Bivariat

Table 3. Correlation between Age, education level, and work experience with the completeness of electronic surgical safety checklist documentation at RSUD Banyumas.

Variable	completeness of electronic surgical safety checklist		p-value
	Incomplete (%)	Complete (%)	
Age			
20-30 years	0.00	17.6	0.023
31-40 years	23.6	17.6	
>40 years	8.8	32.4	
Education level			
DIII	32.4	38.2	0.009
S1 Ners	0.00	29.4	
Work experience			
1-5 years	26.5	17.6	0.002
6-10 years	5.9	8.8	
>10 years	0.00	41.2	

Based on table 3 above, it is known that Age related to the completeness of electronic surgical safety checklist documentation at RSUD Banyumas, expressed as p value $< \alpha$. Surgical nurses aged over 40 exhibit a higher level of compliance in completing documentation on the electronic Surgical Safety Checklist. The research conducted by Risanti et al., (2021) indicates a significant relationship between age and compliance in implementing the Surgical Safety Checklist (SSC). Age is closely related to an individual's level of maturity. Increasing age suggests greater emotional maturity, which implies increased wisdom in decision-making, rational thinking, tolerance for existing policies, emotional control, and openness to others' perspectives[6].

Surgical nurses with a Bachelor's degree (S1) show a higher level of compliance in completing the electronic Surgical Safety Checklist. This is demonstrated by the fact that all 10 nurses with a Bachelor's degree consistently fill out the electronic Surgical Safety Checklist completely. There is a significant relationship between the level of education and the implementation of the Surgical Safety Checklist in the operating rooms of Prima Hospital Pekanbaru[9]. A person's level of education is related to their compliance with the implementation of the SSC (Surgical Safety Checklist) at the Central Surgical Installation of RSUD Banyumas. A person's level of education is considered to have an influence on their level of knowledge, and health knowledge affects behavior as an intermediate impact of health education. The higher a person's level of education, the easier it is for them to acquire and develop knowledge and technology[10].

Based on the findings from the above research, nurses with more than 10 years of experience tend to be more compliant in electronic Surgical Safety Checklist documentation. The longer a nurse's tenure in the Central Surgery Department, the more experienced they become, which has a positive influence. The relationship between length of service and compliance in filling out the Surgical Safety Checklist has been statistically proven. The odds ratio of 36 indicates that respondents with more than 3 years of experience are 36 times more likely to fill out the SSC compliantly compared to respondents with less than or equal to 3 years of experience[11]. Application surgical safety checklist has a positive impact on patient safety, teamwork and communication between the surgical team [12]. Surgical safety checklists may be used as some of the tools to prevent such complications. Use of checklists may reduce critical workload by eliminating issues that are already controlled for. The global introduction of the World Health Organization Surgical Safety Checklist aimed to improve safety in both anesthesia and surgery and to reduce complications and mortality by better teamwork, communication, and consistency of care [13]

4. CONCLUSION AND RECOMMENDATION

Based on the research results and discussions, the conclusion that can be drawn is that the majority of nurses completed the electronic surgical safety checklist documentation (67.6%). There is a correlation between

age, education level and work experience with the completeness of electronic surgical safety checklist documentation at RSUD Banyumas.

RSUD Banyumas is expected to facilitate the improvement of electronic surgical safety checklist documentation completeness, such as: Regular education and training on surgical safety checklists for all surgical nurses at the Central Surgical Installation of RSUD Banyumas, especially for surgical nurses aged 31 to 40, holding a DIII level of education, and having 1 to 5 years of experience. This is particularly important as the research findings indicate that many in this group still tend to incompletely fill out the electronic surgical safety checklist. The education and training are aimed at ensuring that surgical nurses complete the electronic surgical safety checklist in accordance with the RSUD Banyumas Standard Operating Procedures (SPO) and have a consistent perception when filling out each item on the electronic surgical safety checklist. Provide motivation and facilities for nurses to advance their education to become SKepNers, as the research data indicates that higher levels of education among nurses correlate with increased compliance in completing the electronic surgical safety checklist. Furthermore, it is easier for individuals with higher education levels to acquire and develop knowledge and technology. There are specific standards or requirements to become a Central Surgical Installation's nurse, such as a minimum age, education level, and defined work experience. These criteria can support the smooth operation of all activities in the Central Surgical Installation, which has a high-paced and complex work rhythm.

Nurses should have a high level of commitment and responsibility when it comes to performing electronic surgical safety checklist documentation to enhance patient safety. For future researchers wishing to conduct the same study, it would be beneficial to include additional research variables, allowing for multivariate analysis and the control of factors influencing the study. Additionally, consider employing new research methods for a more comprehensive approach.

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