

The Level of Competence and Compliance of the Surgical Team in Executing the Surgical Safety Checklist "Time-Out" in Selected Hospitals in Bulacan

Noelyn Grace Y. Reyes¹, Dr. Jovencio Milan, Jr.²

<https://orcid.org/0009-0000-7457-7548>¹, <https://orcid.org/0000-0001-6346-0360>²

St. Bernadette of Lourdes College ^{1,2}

nreyes@sbic.edu.ph¹, jmilan@sbic.edu.ph²

ABSTRACT

The World Health Organization (WHO) Surgical Safety Checklist has been recognized as an effective strategy in reducing preventable surgical errors and improving patient safety. This study determined the level of competence and compliance of surgical teams in executing the Surgical Safety Checklist "Time-Out" in selected hospitals in Bulacan. Specifically, it assessed the respondents' demographic profile, levels of competence in knowledge, skills, and attitudes, level of compliance, and the relationship between competence and compliance. A quantitative descriptive-correlational research design was employed involving 60 surgical team members selected through purposive sampling. Data were gathered using a validated self-administered questionnaire and an observation checklist adapted from the WHO Surgical Safety Checklist. Mean, Pearson correlation coefficient, and Chi-square test were used to analyze the data. Findings revealed that the respondents demonstrated a high level of competence (overall mean = 3.60) and satisfactory compliance with the Time-Out procedure (mean = 1.58). A moderate, positive, and significant relationship was found between competence and compliance ($r = 0.5866$, $p < 0.05$), indicating that higher competence is associated with better compliance. Training significantly influenced both competence and compliance, while age and clinical experience were not significantly associated with either variable. The findings highlighted the importance of continuous education, competency assessment, and institutional support in sustaining safe surgical practices and improving patient outcomes.

Keywords: Surgical Safety Checklist, Time-Out, competence, compliance, patient safety, operating room.

INTRODUCTION

Patient safety is a fundamental component of quality surgical care, and the World Health Organization (WHO) Surgical Safety Checklist (SSC) was developed to reduce preventable surgical errors and improve communication among members of the surgical team (World Health Organization [WHO], 2018). The Time-Out phase, performed immediately before skin incision, serves as a critical safety measure to verify the correct patient, procedure, operative site, and team readiness. Previous studies have shown that consistent implementation of the SSC improves teamwork, enhances patient safety, and reduces surgical complications; however, variations in competence and adherence to the checklist continue to affect its effective implementation in clinical practice (Haynes et al., 2009; Gul et al., 2022; Habtie et al., 2025). In the Philippines, the Perioperative Registered Nurses Association of the Philippines (ORNAP, 2020) supports the use of the WHO Surgical Safety Checklist as part of perioperative nursing standards. This study determined the level of competence and compliance of surgical team members in executing the WHO Surgical Safety Checklist Time-Out in selected hospitals in Bulacan and examined the relationship between competence and compliance to provide evidence that may support competency-based training and quality improvement initiatives in perioperative practice.

Statement of the Problem

General Problem

What is the relationship between competence and compliance of surgical teams in executing the Surgical Safety Checklist “Time-Out” in selected hospitals in Bulacan?

Specifically, it sought to answer the following questions:

1. What is the demographic profile of the respondents in terms of:
 - 1.1 Age
 - 1.2 Sex
 - 1.3 Length of Clinical Experience
 - 1.4 Relevant training on Surgical Safety Checklist
2. What is the level of competence of nurses in the surgical team in executing the time-out procedure in terms of:
 - 2.1 Knowledge
 - 2.2 Skills
 - 2.3 Attitudes
3. What is the level of compliance of the surgical team with the Surgical Safety Checklist “time-out”?
4. Is there a significant relationship between the respondents' demographic profile (age, sex, years of clinical experience, and training attended) and their level of competence and compliance in executing the Surgical Safety Checklist Time-Out?

Scope and Delimitations

The study was limited to 60 surgical team members working in selected hospitals in Bulacan. It focused only on the Time-Out phase of the WHO Surgical Safety Checklist. Competence was evaluated through knowledge, skills, and attitudes, while compliance was measured using an observation checklist. The Sign-In and Sign-Out phases of the checklist were excluded.

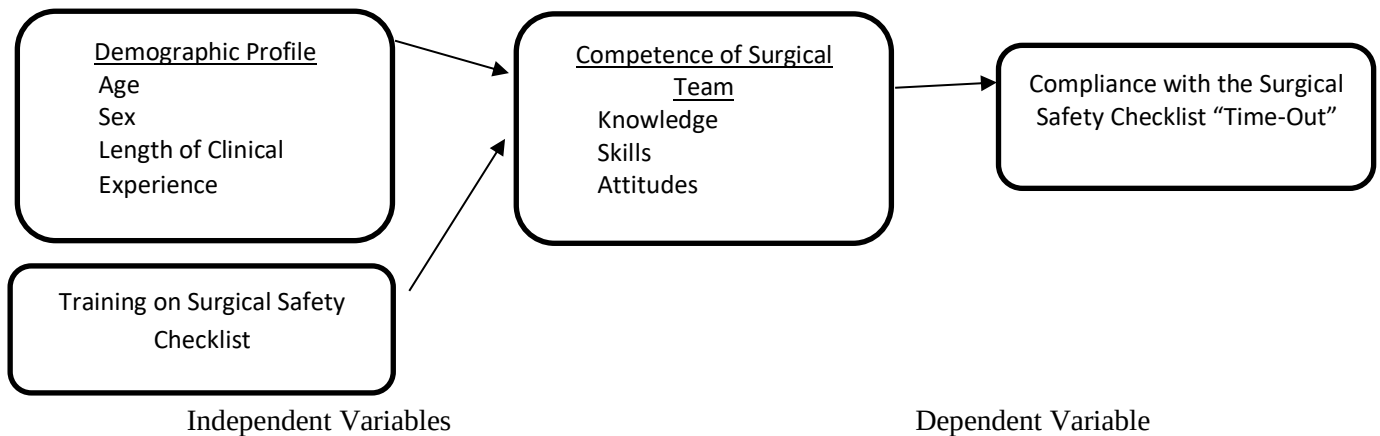
Review of Related Literature

Recent studies have emphasized that proper implementation of the WHO Surgical Safety Checklist significantly reduces surgical complications and improves communication among healthcare professionals. Training, leadership, teamwork, and continuous monitoring are consistently identified as important factors influencing compliance. Previous research likewise demonstrated that healthcare workers with higher competence are more likely to adhere to patient safety protocols, resulting in improved quality of surgical care.

Theoretical Framework

This study was anchored on Patricia Benner's Novice-to-Expert Theory, Imogene King's Theory of Goal Attainment, and Ida Jean Orlando's Nursing Process Theory. Benner's theory explains that nursing competence develops through education, clinical experience, and continuous professional development. King's theory emphasizes effective communication, collaboration, and mutual goal attainment among healthcare professionals, which are essential in ensuring safe and coordinated surgical care. Orlando's theory highlights the nurse's ability to use critical thinking and sound clinical judgment to respond to patient needs and deliver appropriate nursing interventions. Collectively, these theories provide the foundation for understanding how the competence of surgical team members influences their compliance with the World Health Organization (WHO) Surgical Safety Checklist Time-Out procedure, thereby promoting patient safety and improving the quality of perioperative care.

Conceptual Framework



METHODOLOGY

Research Design

A quantitative descriptive-correlational design was employed to determine the level of competence and compliance of surgical team members in implementing the WHO Surgical Safety Checklist Time-Out and to examine the relationship between these variables.

Research Steps

After obtaining administrative approval and informed consent, validated questionnaires and a WHO-based observation checklist were administered. Data were coded, analyzed, and interpreted in accordance with the study objectives.

Data Collection and Sample Selection

Sixty surgical team members from selected hospitals in Bulacan were selected through purposive sampling. Competence was measured with a validated questionnaire, while compliance was assessed through direct observation of adherence to the WHO Surgical Safety Checklist.

Data Analysis Methods

Descriptive statistics (frequency, percentage, and mean) summarized respondent characteristics, competence, and compliance. Pearson Product-Moment Correlation was used to examine the relationship between competence and compliance, while Chi-square was used to test the association between demographic variables and the study variables at a 0.05 significance level.

Research Hypotheses and Validation

This study tested the null hypotheses that there is no significant relationship between the competence of surgical team members and their compliance with the World Health Organization (WHO) Surgical Safety Checklist Time-Out, and that respondents' demographic characteristics are not significantly related to their competence and compliance. The research instruments underwent expert validation to establish content validity before data collection. The findings supported the rejection of the first null hypothesis, demonstrating that competence is associated with compliance in implementing the Time-Out procedure. Furthermore, the study highlighted the importance of Surgical Safety Checklist training in enhancing both competence and compliance, reinforcing the value of continuous professional development and competency-based education in promoting patient safety.

Study Limitations and Ethical Considerations

The study was limited to 60 respondents from selected hospitals in Bulacan and focused solely on the Time-Out phase of the WHO Surgical Safety Checklist. Ethical approval, informed consent, confidentiality, anonymity, and voluntary participation were strictly observed.

RESULTS AND DISCUSSION

The findings revealed that the surgical team demonstrated a high level of competence, with an overall mean score of 3.60, indicating that respondents possessed adequate knowledge, technical skills, and positive attitudes toward implementing the WHO Surgical Safety Checklist. Compliance with the Time-Out procedure likewise showed positive results, obtaining a mean score of 1.58, interpreted as Complied. This indicates that the essential verification steps before surgical incision were generally performed consistently across participating hospitals. Correlation analysis demonstrated a moderate, significant positive relationship between competence and compliance ($r = 0.5866$, $p < 0.05$). This finding indicates that as competence increases, compliance with the Time-Out procedure also improves. Analysis of demographic variables revealed that attendance in Surgical Safety Checklist training significantly influenced both competence and compliance. Conversely, age and years of clinical experience did not significantly affect either variable. Sex demonstrated a significant relationship only with compliance. These findings suggest that continuing education and structured training programs are more important determinants of compliance than demographic characteristics alone.

SUMMARY

The study established that surgical team members demonstrated high competence and satisfactory compliance in implementing the WHO Surgical Safety Checklist Time-Out. Competence was significantly associated with compliance, while training emerged as the most influential demographic factor affecting both variables.

CONCLUSIONS

The study concludes that competence is an important determinant of compliance with the WHO Surgical Safety Checklist Time-Out. Surgical teams possessing higher knowledge, technical skills, and positive attitudes demonstrate better adherence to patient safety protocols. Continuous professional development and competency-based education remain essential in maintaining high-quality surgical care and reducing preventable adverse events.

RECOMMENDATIONS

Hospitals should implement regular competency assessment, simulation-based education, refresher training, and compliance audits to strengthen adherence to the WHO Surgical Safety Checklist. Nurse managers and operating room supervisors should continuously monitor compliance and provide timely feedback to reinforce patient safety practices. Future researchers are encouraged to include multiple regions, larger sample sizes, and the entire WHO Surgical Safety Checklist, including the Sign-In and Sign-Out phases.

ACKNOWLEDGMENTS

The researcher sincerely acknowledges the faculty members of SBLC Graduate School, the participating hospitals, surgical team members, research adviser, colleagues, family, and Almighty God for their invaluable guidance, encouragement, and support throughout the completion of this study.

AI DECLARATION STATEMENT

Artificial intelligence-assisted tools were utilized only for grammar refinement and language improvement. All research concepts, data collection, statistical analysis, interpretation of findings, and conclusions were completed by the researcher.

REFERENCES

- Krstulović, B., Djaković, Ž., & Habek, D. (2025). Phased implementation of the WHO surgical safety checklist improves completeness and compliance: A quality improvement study. *Croatian Medical Journal*, 66(2), 113–121.
- Gasoma, M., Hailu, M., & Tsegaye, W. (2024). Factors influencing surgical safety checklist utilization in general surgery departments: An interventional study. *Annals of Global Health*, 90(2), 205–214. <https://doi.org/10.5334/aogh.4359>
- Mogessie, B., Mekonnen, S., & Fenta, M. (2024). Utilization of surgical safety checklist in cesarean section procedures in public hospitals of Ethiopia. *Ethiopian Journal of Health Sciences*, 34(3), 345–354.
- Habtie, B. T., Mengistu, B. N., & Gebremariam, A. B. (2025). Compliance and completeness of the WHO surgical safety checklist: A systematic review and meta-analysis. *BMJ Open Quality*, 14(1), e003452. <https://doi.org/10.1136/bmjoq-2025-003452>
- ORNAP. (2020). *Perioperative Nursing Standards and Recommended Practices* (2nd ed.). Perioperative Registered Nurses Association of the Philippines. Toru, M., Woldemichael, T., & Hailemariam, A. (2023). Effectiveness of training and audit feedback on the implementation of the WHO surgical safety checklist in a tertiary hospital. *International Journal of Surgery Open*, 53, 100644.
- Haynes, A. B., Weiser, T. G., Berry, W. R., et al. (2009). A surgical safety checklist to reduce morbidity and mortality in a global population. *New England Journal of Medicine*, 360(5), 491–499.