

Nurses' Compliance with Surgical Safety Protocols for Patients Having Abdominal Surgery in Saudi Arabia

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ABSTRACT :

Background: Surgical safety practices, which are designed to enhance adherence to evidence-based safety practices, communication, and teamwork during critical time points such as during surgical procedures, before induction of anesthesia, before incision, and before the patient leaves the room, can completely prevent patient safety events in the operating room. Aim of the study: Assessing nurses' compliance with surgical safety protocols for patients undergoing abdominal surgery was the goal of this study.

Methods and subjects: Design: To accomplish the goal of this study, a descriptive exploratory research design was employed.

Setting: a university-affiliated hospital in Jeddah, Kingdom of Saudi Arabia (KSA) operating departments served as the study's sites. Study participants: The study includes a convenient sample of 150 nurses from the aforementioned departments, representing all available nurses. Data collecting instruments: The two sections of the surgical safety standards questionnaire and the demographic details of the nurses under study were used to conduct this study.

Results: According to the study's findings, nurses primarily followed the guidelines for preventing incorrect surgical procedures, incorrect patient procedures, and incorrect sites, as well as for enhancing efficient communication among medical staff. This study presented that less than half of the studied scrub nurses and only minority of the circulating nurses and anesthesia nurses had competent practices at the operating room respectively.

Conclusion: The study found that while there were no statistically significant relationships between the competent practices of anesthesia nurses, their gender, and training course attendance, there were statistically significant relationships between the competent practices of scrub nurses and their attendance of surgical safety training courses, as well as between the competent practices of circulating nurses and their age and years of experience.

Introduction:

The cornerstone of quality patient care is patient safety. Above all, individuals want their family members to be safe when they are in the hospital or receiving other medical care. Being hurt, or even causing injury, in a setting of trust and care is a terrible experience. People think that safety

serves as a benchmark and a guidance for patient care. When a clinician or organization prioritizes safety over numerous, frequently conflicting demands, they do something extraordinary and deliver the treatment that everyone desires [1].

The health care quality movement has given rise to numerous definitions of patient safety, many of which are similarly abstract and take different tacks when discussing the more tangible key elements. The Group for Patient Safety [2]. The avoidance and prevention of patient injuries or unfavorable occurrences brought on by the procedures used to administer healthcare is known as patient safety. The World Health Organization [3] also defined patient safety as "the prevention of harm to patients."

One of the essential medical treatments provided by the healthcare system is surgery. Worldwide, more than 234 million surgeries are carried out each year, and 3–16% of them end in problems. According to estimates, at least half of surgical complications are preventable, despite the fact that they are significant sources of morbidity and mortality as well as a significant financial burden on patients and providers. Since the health care system has long emphasized the value of a safety culture that supports patients' safety initiatives, surgical care safety is a global priority (1). Surgical patients are more likely to experience problems and perhaps pass away. To deliver prompt and efficient care, even routine surgery necessitates the intricate coordination of surgeons, anesthesiologists, nurses, and support personnel. Time constraints and increased patient acuity raise the risk of serious mistakes and omissions in accepted standards of treatment. In addition to improving the quality of treatment, the World Health Organization's surgical safety checklist was linked to a one-third reduction in complications for all noncardiac adult surgery types (2). Lack of safety procedures during surgery has been linked to a number of surgical adverse events that can result in avoidable fatalities. Common causes of preventable surgical complications include operating on the incorrect patient, performing the procedure or at the incorrect site, using insufficient anesthesia, having surgical skills and equipment, not being prepared to handle unexpected blood loss, using non-sterile equipment, leaving surgical sponges and items inside patient cavities, which can lead to sepsis, and failing to use non-technical skills like communication and teamwork. In Africa, where the risk of death from perioperative complications is much higher than in other regions and patients are twice as likely to die after surgery as the global average, patient safety and measures to ensure the best possible outcomes from surgery are especially crucial (3). To increase surgical patient safety, the World Health Organization created the Surgical Safety Checklist (SSC) in 2008. The SSC promotes improved teamwork and communication among clinical specialties while reinforcing safety procedures in surgery. At three crucial points in the typical course of a surgical procedure—the briefing phase prior to anesthesia induction, the time-out period following induction and prior to surgical incision, and the debriefing phase following wound closure and prior to exiting the operating room—it is intended to enable the surgical team, anesthesia providers, nurses, and others to discuss, agree, and verify critical details about each surgical case (4). The safety of the patients must be the primary focus of basic nursing care. In addition to advocating for patients' safety and reporting any unfavorable incidents, nurses should be in charge of informing patients about potential risks and ways to reduce them. According to this perspective, nurse safety protocols are an essential component of operating room patient care throughout the preoperative, intraoperative, and postoperative stages of intraoperative therapy (5).

Significant of the study:

Approximately 234 million surgical procedures are carried out annually worldwide in the operating room, a fast-paced, high-pressure, dynamic work environment where a wide range of patients' conditions are managed by multidisciplinary health care providers and complex procedures (Bansal & Ray, 2021). According to estimates, surgical patients experience 66% of inpatient adverse events, half of which can be avoided (Alshyyab et al., 2022). An estimated 4.2 million post-operative fatalities occur each year in developing nations; mortality rates for major procedures are expected to range from 5 to 10%, which is ten times higher than the surgical mortality rate in wealthy nations (Cadman, 2019). During the postoperative phase, the nurse's duties include pain management, clinical treatment of complications, and early diagnosis and management of surgical and anesthetic issues. Monitoring and enhancing operating room nurses' safety attitudes is essential for patient safety. A skilled nursing team is necessary to guarantee high-quality patient care while lowering the possibility of patients suffering severe injuries or passing away (Lalithabai et al., 2022).

The study's objective

The purpose of this study was to evaluate nurses' level of practice with reference to surgical safety recommendations in order to determine their adherence to these guidelines for patients undergoing abdominal surgery.

Research question :

What is the level of nurses' practices compliance regarding surgical safety guidelines for abdominal surgery?

Methodology:

Research design: descriptive, exploratory ,cross-sectional research design was utilized to conduct this research

setting:

The study was conducted at three operating theaters in the university hospital at Jaddah ,kSA.

The operating theaters is providing surgical procedure for major and minor abdominal surgery such as; appendectomy; splenectomy; cancer colectomy ...etc.

Subjects: The study includes a convenient sample of 150 nurses from the aforementioned departments, representing all available nurses. There were 110 scrub and circulating nurses and 40 anesthesia nurses.

Inclusion criteria :

All staff nurses who worked three shifts (morning, evening, and night shift) in surgical units at hospitals during the study period and had at least one month of experience there.

Data collecting instruments:

One tool was utilized for the purpose of the study .

It consisted of two part:

The first part are the safety guideline for abdominal surgery compliance questionnaires: it was developed by the researcher based on the WHO safety guideline for perioperative surgery, it was used to assess nurses compliance with the safety guidelines of abdominal surgery.

There were forty-five items in it. There were 19 things related to the practices of anesthesia nurses in the operating room. Surgical safety guidelines scoring system Checklist: Each checklist item was given a score of "one" for completed steps and a score of "zero" for unfinished ones. The sum of the item scores was then divided by the total number of items to determine the part's mean score. Percentage scores were generated from these scores.

Each part of nurses' practices had its overall score determined, and the results were characterized as follows: competent if the total score was greater than 90%, and incompetent if the entire score was less than 90%.

The second part were the personal, professional work related data : it was developed by the researcher include; age, marital status, and educational level, receiving training, experience.

Section II: Questionnaire on Surgical Safety Guidelines

Reliability:

Cronbach's Alpha was utilized to assess the internal dependability of the produced tool, and it demonstrated good reliability for surgical safety. To find out how closely the questionnaire items relate to one another, the tool's reliability was examined. The surgical safety compliance questionnaire had a reliability score of 0.876.

Validity: The face and content validity of the study instruments were examined. Finding out if the instruments measure what they were intended to assess was the goal of face validity. To ascertain whether the tool's content addressed the study's goal, content validity was carried out. Five specialists, served on the jury that measured it. The tool's clarity, relevance, correctness, comprehensiveness, simplicity, and applicability were evaluated by the experts, and some small adjustments were made.

Data collection:

The investigator had a list of all nursing staff members throughout the surgical units in the three ORs from the three head nurses. After obtaining formal written approval from the ethics and research committee and the approval of the university hospital's medical directors, the investigator explained the purpose of the study and asked for their consent to approach the participants at the three shifts.

The researcher began inviting each person individually, and during the break, a self-reported questionnaire was distributed. After around 20 to 30 minutes, the researcher went over the self-reported questionnaire to look for any missing statements.

Statistical analysis :

After data collection was finished, the Statistical Package for the Social Sciences (SPSS), version 24, was used to compute and analyze the data. The results were described using the quantitative mean and standard deviation (SD).

Results:

Table (1): Frequency and percentage distribution of the studied scrub and circulating nurses according to their demographic characteristics (N=110) Nurses' Characteristics (scrub and anesthetic nurses

| | studied scrub and circulating nurses | | studied anesthesia nurses | | Total studied nurses | |
|-----------------------|--------------------------------------|-------------|---------------------------|--------------|----------------------|--------------|
| | No | % | No | % | No | % |
| Age (in years) | | | | | | |
| 20 > 30 | 20 | 18.1 | 40 | 100.0 | 60 | 40 |
| 30 > 40 | 52 | 47.2 | 0 | 0.0 | 52 | 34.66 |
| 40 years or more | 38 | 34.5 | 0 | 0.0 | 38 | 25.33 |
| Mean + SD | 35.32 ± 7.47 | | 21.85 ± 1.18 | | 32.32 ± 2.47 | |
| Gender | | | | | | |
| Male | 10 | 20.0 | 16 | 40.0 | 36 | 24 |
| Female | 100 | 80.0 | 24 | 60.0 | 124 | 82.66 |

Educational Qualification

| | | | | | | |
|-------------------------------------|----|-------------|----|-------------|-----------|--------------|
| Secondary Nursing school Diploma | 80 | 78.2 | 10 | 0.0 | 90 | 60 |
| Technical nursing institute diploma | 24 | 21.8 | 30 | 80.0 | 54 | 36.00 |
| BSCs | 6 | 5.5 | 0 | 0.0 | 6 | 4.00 |

Years of experience at operating room

| | | | | | | |
|------------------|--------------|-------------|------------|--------------|--------------|--------------|
| Less than 1 year | 16 | 7.3 | 40 | 100.0 | 56 | 37.33 |
| 1 < 5 years | 18 | 16.3 | 0 | 0.0 | 18 | 12.00 |
| 5 < 10 years | 16 | 14.6 | 0 | 0.0 | 16 | 10.66 |
| 10 years or more | 68 | 61.8 | 0 | 0.0 | 68 | 45.33 |
| Mean + SD | 12.14 + 2.78 | | 1.45+0.876 | | 11.34 ± 1.78 | |

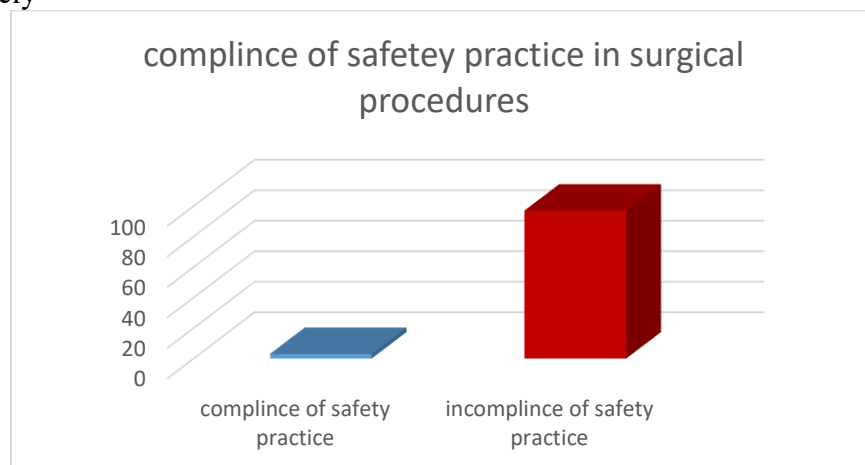
Attended training courses related to surgical safety

| | | | | | | |
|-----|----|-------------|----|-------------|------------|--------------|
| Yes | 96 | 87.2 | 22 | 55.0 | 118 | 78.66 |
| No | 14 | 12.8 | 18 | 45.0 | 32 | 21.33 |

Duration after training

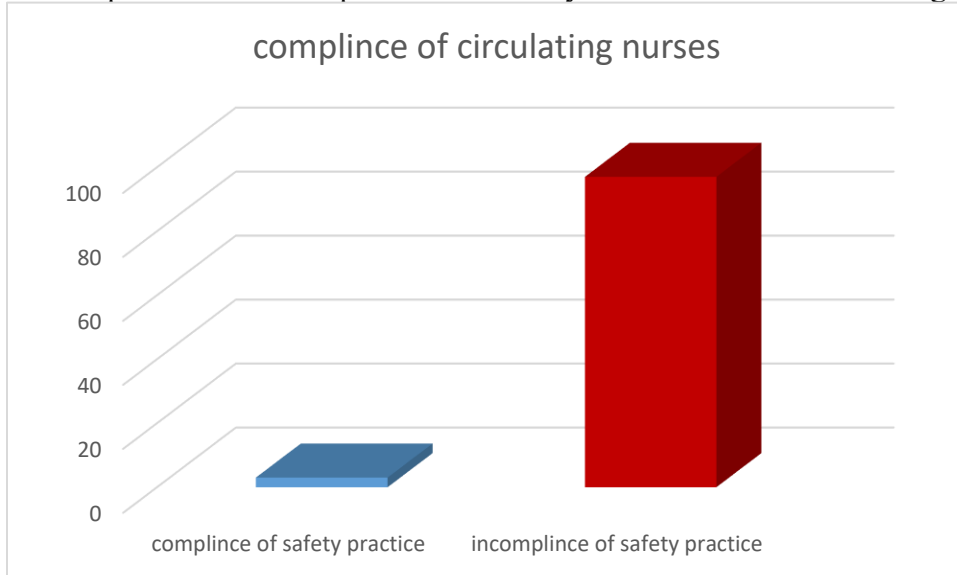
| | | | | | | |
|------------------|----|-------------|----|-------------|-----------|--------------|
| Less than 1 year | 0 | 0.0 | 12 | 36.3 | 12 | 8.75 |
| 1 < 5 years | 68 | 70.8 | 28 | 63.7 | 96 | 64.00 |
| 5 < 10 years | 28 | 29.2 | 0 | 0.0 | 28 | 18.66 |

Figure 1 pointed that scrubbed nurses Compliance of safety practice in abdominal surgery, more than two third had incompliance with safety measures in abdominal surgery(65%). However they were the highest adhered group in comparing with the anesthesia or circulating nurses (34%; 11; 4%) respectively



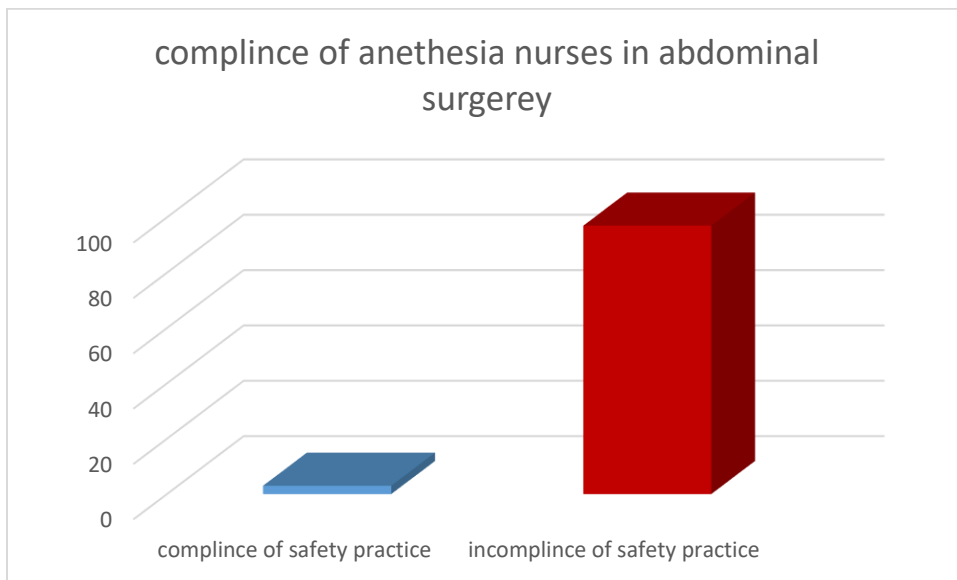
Figur 1 the frequancy distribution of the scrubed nurses according to their surgical safetey complince

Figure 2 pointed that Circulating nurses Compliance of safety practice in abdominal surgery, more than three quarter had in compliance with safety measures in abdominal surgery (89%).



Figur 2 the frequency distribution of the Circulating nurses according to their surgical safetey complince

The majority of anesthesia nurses had in compliance with the safety surgical practices in abdominal surgery (91%) as illustrated in figure 3



Figur 3 the frequency distribution of the Anesthesia nurses according to their surgical safetey complince

Discussion :

The effectiveness of preoperative teaching may be linked to both surgery cancellations and postoperative problems, including chronic pain. About half of patients who have back surgery report having considerable discomfort for at least six months following the procedure, according to Laufenberg-Feldmann's research (Laufenberg-Feldmann et al., 2016). Additionally, before to surgery, some patients might fast for an extended length of time. The elderly and young patients are two vulnerable patient categories that may be impacted by this extended preoperative fasting period (El-Sharkawy et al., 2021). Good education enables patients to understand their health state, have a satisfactory preoperative preparation, lower anxiety, effectively manage their pain, engage in self-management, and attain the best possible results (Simonsmeier et al., 2022). Since this study provides first findings on the subject, it is regarded as a foundation for further research, particularly in Saudi Arabia, to evaluate nurses' opinions about crucial components of preoperative education. Hence the aim of this study is to assess the level of competence among scrubbed, circulating, anesthesia nurses in abdominal surgery

This study revealed that More than two-thirds of the nurses in the current study demonstrated a completely competent level of operating room techniques. This indicates that over two-thirds of them had ten years or more of experience, and most of them took surgical safety training courses. This result is consistent with a study by Bahar and Önlü (25), which discovered that operating room nurses had more advanced practices.

According to the current study, the standard of "Eliminate Wrong-Site, Wrong-Patient, Wrong-Surgical Procedure" was determined to be the most applied standard when it came to nurses' compliance with all national patient safety standards. This might be because a surgical safety checklist requires a nurse to verify all the information about the patient and his surgical procedure, such as the patient's name, the type and location of the surgery, surgical informed consent, the prophylactic antibiotic administered prior to surgery, whether the patient fasted for the required amount of time prior to surgery, and the availability of information regarding surgical supplies.

This was in line with the findings of Henneman et al. [13], who discovered that 8% of nurses administered medication to the incorrect patient after misidentifying 39% of nurses. Additionally, similar research has shown that adverse outcomes are strongly linked to a nurse's lack of skills and poor understanding regarding medication use. Liangrong and associates [14].

Furthermore, hospital-acquired illnesses may result from nurses' ignorance, negative attitudes, and inadequate infection prevention and control procedures. [15] Chitimwango P. When Nair et al. [16] evaluated the knowledge, attitudes, and hand hygiene practices of medical staff and nurses at a tertiary healthcare facility, they discovered that most nurses lacked enough knowledge on hand hygiene.

The standard of lowering the risk of patient harm from falls was the one that nurses in this study applied the least. This could be because there were no guidance marks to distinguish between patients who were at risk of falling and those who weren't, and some beds didn't have side rails to keep patients from falling, or if they did, nurses occasionally forgot to raise them. Additionally, there are more patients admitted to the unit than nurses working a shift, which means that nurses don't have enough time to evaluate and reevaluate the patient's condition and fall risk or even to assist patients who are in danger when they move

Less than half of the nurses in the study had overall competent operating room procedures, according to the current study. This finding contradicts a research by Shin and Kim (26) that indicated the strongest perioperative abilities were had by OR nurses. Less than two-thirds of circulating nurses, according to the WHO surgical safety checklist, perform the most critical surgical safety issues, including assessing the risk of blood loss, confirming the presence of essential imaging, introducing each team member by name and role, and recording the name of the surgical procedure, even though the majority of them follow many safety procedures.

According to the current findings, the majority of the anesthesia nurses under study had completely inept operating room practices. This finding is consistent with Jeon et al. (27) who found that patients' care and their understanding of anesthesia were both rated poorly. This can be the result of a lack of training programs, a lack of job descriptions for anesthesia nurses, a lack of anesthesia nursing experience, or experience of less than a year.

This result contradicts the findings of Ahmed and Awad's study (28) which showed that a good level of performance was achieved in terms of the application of the surgical safety checklist (sign-in) prior to the induction of anesthesia, prior to the skin incision and debriefing, and prior to the closure of the wound.

These results are in line with another study that was carried out in Copenhagen on 51 units (38 surgical and 13 anesthetic). The study found that a significantly greater number of accredited units had guidelines in place than non-accredited units, and that the accredited units had a significantly higher improvement on the Systematic Development Scale than the non-accredited units. This study highlights the importance of accreditation in enhancing patient safety and health outcomes in hospitals (Jul AB et al., 22). Additionally, a recent study on the positive effects of organization boards on care quality conducted in hospitals in the United States and England discovered that high-quality hospitals' organization boards employed more efficient management techniques to uphold quality standards. [23] Tsai TC, et al.

Conclusion :

At the institutional level, the study evaluated the reasons that led to the peri-operative surgical team in the Kingdom of Saudi Arabia performing Safety surgical Compliance less than optimally. Therefore, in order to increase adherence to WHO SSC, it is critical that the managerial teams support the surgical perioperative team. Ongoing supervision, in-service training, mentorship, assessment, and merit awards for strong patient safety adherence are all ways to offer support. These results can also be utilized for future study and to create plans to encourage perioperative surgical team adherence to Safety surgical Compliance .

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