IBOM MEDICAL JOURNAL
Vol.19 No.4 | October 2026 | Pages 1135-1141
www.ibommedicaljournal.org

Sentinel events, a burden in the operating room: A literature review

Gbadamosi DR[1], Gbadamosi IA[2], Opatunji FO[3]

[1]*Faculty of Nursing, Department of Medical Surgical Nursing, University of Ibadan, Nigeria.*
[2]*Clinical Nursing Department, University College Hospital, Ibadan, Nigeria.*
[3]*Faculty of Nursing science, Lead City University, Ibadan, Nigeria*

Abstract

Context: Despite the existence of diverse integrated surgical safety measures pre-, intra-, and post-operatively globally, preventable adverse medical errors still occur to the patients in the operating rooms and has been regarded as the major cause of temporary or permanent disability and death among the victims.
Aim: The purpose of this paper is to explore sentinel events in the operating rooms
Materials and Methods: A comprehensive literature search was conducted across the electronic databases PubMed/MEDLINE, Embase, Conchrane and Google Scholar to source numerous articles on the subject matter. The articles search was between 2005 and 2026. Terms were combined using Boolean operators such as "Sentinel" AND "events," "operating room" AND "surgical team members".
Results: Various forms of sentinel events occur in the operating room but the common ones are fall, wrong-site surgery, retained surgical items, and operating room fire. Factors responsible for these events in the operating rooms are organizational factors such as limited policies, lack of perioperative protocols, and staff shortage Effective communication between the patient and surgical team members are crucial preventive measures against sentinel events in the operating rooms.
Conclusion: It is pertinent for surgical-team to be knowledgeable about patient safety. Also, standard practice protocol should be entrenched to limit sentinel events in the operating rooms.

Key words: Sentinel Events, Burden, Operating Room, Literature Review, Never events

Introduction

1.1 Background

Globally, surgical care has been an integral part of healthcare services, and diverse patient safety measures have been inculcated pre-, intra-, and post-operatively. Despite this, errors or near misses still occur.[1] Intra-operative practice is highly complex and challenging, putting into perspective the patient's vulnerability.[2] Patient safety during surgery is one of the major alarms for surgical team members, as adverse events occurring during this period are the major cause of disability and death.[3]

A major source of mortality and morbidity is unsafe care, and safety promotion should form the basic foundation of the health system.[4] At the 55th World Health Assembly, it was identified that patient safety should be promoted, thus encouraging support for member states to promote safety culture within health care organizations and encourage research in this aspect.[4] Individual and group value, attitude, perception, and competence are linked cumulative factors in patient safety.[4]

Corresponding Author:

Gbadamosi, Demilade Raqeebat
Faculty of Nursing, Department of Medical Surgical Nursing, University of Ibadan, Nigeria.

demiladesalam@gmail.com

DOI: 10.61386/imj.v19i4.1388

An adverse safety event that results in mortality, severe temporary and permanent harm to the patients pre-, intra- or post-operatively in the operating room, is termed a sentinel event which pose significant distress to both patients and health care providers involved in the event.[5] The concept "never event" was initially introduced by the National Quality

Forum (NQF), in which a list of serious reportable events was made.[6] Previously, these events only involved patients, but in recent decades, the concept has been expanded to be inclusive of harmful events that happen to staff, visitors, and vendors on the organization's premises.[5]

According to Jung et al,[7] factors linked to sentinel events include personnel's distraction, lack of surgical team member on situational awareness to prevention of impending error, and poor communication among team members. Altalhi et al,[8] furthermore opined that policies and procedures, ineffective communication, shortage of staff, and lack of competencies are also contributory factors.

The third major reported cause of death in a surgical setting in an advanced country is preventable medical errors and near misses, contributing to 1708 mortality annually.[9-10] Organizational factors such as limited policies, lack of perioperative protocols, and staff shortage, and human factors such as lack of communication among the concerned people are the most implicated factors linked to these never events.[11] An event is not only termed sentinel if death, severe temporary harm, or permanent harm is the outcome, but also events that signal the need for immediate investigation.[12]

1.2 Significance of Study

Despite the existence of diverse integrated surgical safety measures pre-, intra-, and post-operatively globally, preventable adverse medical errors still occur to the patients in the operating rooms worldwide, and has been regarded as the major cause of temporary or permanent disability and death among the victims.[13]

This review will provide evidence-based data on the various forms of likely sentinel events in the operating rooms, and factors responsible for them. It will also provide information on negative impacts of sentinel events on the affected patients, surgical team members, and the healthcare institutions. Furthermore, the review will provide preventive measures to curb the menace of sentinel events in the operating rooms. Lastly, the findings will serve as reference guide for future researchers.

1.3 Objectives of the Study

1.3.1 General Objective: To explore sentinel events in the operating rooms

1.3.2 Specific Objectives

i. To describe various forms of likely sentinel events in the operating rooms
ii. To determine factors responsible for sentinel events in the operating rooms
iii. To identify negative impacts of sentinel events on the affected patients, surgical team members, and the healthcare institutions
iv. To determine preventive measures against sentinel events in the operating rooms.

1.4 Scope of the Study

The focus of this review is on surgical settings and surgical team members.

1.5 Conceptual Framework

The conceptual model was utilized in this review is the Swiss cheese model of accident causation. It was originally formally propounded by a British psychologist, James T. Reason as a linear accident causation model. It is useful in analysis and management of risk.

This model views defensive system layers as slices of cheese with holes representing weak points. Harm or accidents occur when these gaps align across every layer, allowing a hazard to pass right through the system. Healthcare and other industries widely use this model in relation to safety plans and investigate root causes.[14]

1.6 Methodology

A comprehensive literature search was conducted to identify relevant publications evaluating sentinel events in the operating room. Electronic databases including PubMed//MEDLINE, Embase, the Cochrane and Google Scholar were searched to ensure sufficient retrieval of literature. The articles used in this review were original studies, review articles, case reports, and book chapters, published in English. between 2005 and 2026. Terms were combined using Boolean operators such as "Sentinel" AND "events," "operating room" AND "surgical team members".

To ensure the relevance and academic rigor of the literature review, explicit selection criteria were applied. Studies that directly addressed sentinel events, operating room and surgical personnel in addition to utilizing robust empirical designs were included. Duplicate citations across databases, non-peer-reviewed opinion pieces, letters to the editor, or studies focusing on unrelated clinical outcomes

publications were excluded.
The initial electronic search yielded a diverse pool of literature. Following a secondary screening of titles, abstracts, and full texts against the established criteria, a total of 42 reference articles was selected for the literature review. The data extracted from these 42 sources was systematically organized to address the core objectives of this review.

2.0 Review of Related Literature

2.1 Forms of Sentinel Events in the Operating Room

2.1.1 Patient Falls

According to the Joint Commission, patient falls are the most frequent sentinel events with a significant rise within a year span[15]. Patient's fall in an operating room (O.R.) or from a procedural table is a grave negligence leading to injuries, medical liability, and thus creating a negative image for the institution and health professionals overall.[16] Surgical patient falls, though preventable, continue to be a persistent harm despite advances in patient safety.[17]
Perioperative falls can occur at any stage of the surgical process, including ambulatory surgeries[15]. Surgical patients' falls have been linked to multiple factors namely elevated transport and operating room bed and diminished sensory perception[15].
Patients' transfer within operating rooms poses a significant risk, especially during transitions from stretchers to operating tables.[18] In a perioperative safety reports review of 8,337 cases over 6 years, 86 recorded falls occurred in the operating rooms.[19] This event is universally a preventable adverse event, and its effect can be catastrophic in the following ways, such as brain damage, paralysis, pain, soft tissue or head injury, swelling, ecchymosis, prolonged hospitalization, need for rehabilitation, and death.[16]
Emotional consequences on both patients and health personnel, such as depression, fear of additional fall, personnel's anxiety and guilt, its financial consequences also cannot be overlooked.[15] The following complications have been linked to patient falls in procedural areas: multiple postoperative complications (additional falls), decline in functional ability, and unplanned hospital read missions.[17]
Though rare, falls during these transfers occur but can be prevented by implementing targeted safety measures, making them a critical focus for enhancing patient safety.[17]

2.1.2 Wrong-site Surgery

The common causes of mortality and morbidity are medical errors and wrong-site surgeries.[20] This duo is defined as a medical error involving a surgical procedure on the wrong site of the body, the wrong person, or the wrong procedure.[20] Wrong-site surgery is probably the most dramatic, visible, and devastating of all surgical errors and the most feared error among surgical practitioners.[21] These are never events that are errors that should never occur and indicate a serious underlying safety problem.[22]
The incidence of wrong-site injury is not alien, rare or strange in Nigeria despite denial and conspiratorial concealment.[20] According to the Joint Commission (2023), wrong-site surgery accounted for 6% of the 1,441 sentinel events reviewed. Above average of the wrong surgery sentinel events are wrong-site procedures.[23] The Joint Commission on Accreditation of Healthcare Organizations of the USA (JCAHO) identified wrong-site surgery as a sentinel event, while the National Patient Safety Agency of the United Kingdom described it as "Never Event'' that is serious, preventable patient safety incident that should not occur if the preventive measures were implemented.[20]
Over a decade span, wrong-site surgery was the second-most frequently reported sentinel event that leads to death, permanent harm, or severe temporary harm.[23] Despite continuous efforts to reduce wrong-site surgeries, these events persist causing grave and possibly permanent physical and psychological harm to a patient, including death.[24]
Multiple risk factors have been implicated in wrong-site surgery by JCAHO, namely: emergency cases, physical deformity, multiple surgeons and procedures conducted during surgical session.[20] In addition, misinterpretation of clinic letters or radiology report is the commonest reason for wrong-site being marked before surgery.[21] Root cause analysis has linked factors such as distraction, incomplete pre-operative assessment, lack of pertinent information in the operating room, policy issues such as non-marking of the surgical site, and lack of verification of the operation checklist in the operating room.[20]
Other factors implicated in wrong-site surgeries are insufficient time-out procedures, pre-occupation or task fixation limiting situational awareness, and lack or insufficient common understanding among team members.[23] Wrong-site, wrong-procedures, and

wrong-person surgeries preventive measures as suggested,[25] include: conducting a pre-surgical verification check, marking the procedure site, and performing a time-out.

2.1.3 Retained Surgical Items

Retained surgical items (RSIs) refer to foreign bodies such as surgical sponges, instruments, tools, or devices left in a patient's body cavity by error in a patient on completion of surgery or other procedure,[25] and thus requiring further procedure.[26] An item is considered retained if discovered after skin closure and/or if the patient is still in the operating room under anesthesia.[25] The most retained foreign bodies are sponges located in body cavities such as the abdomen, pelvis, and retroperitoneal space. These retained objects may remain in the body, ranging from days to years, before eliciting an inflammatory reaction.[26]

According to Maldonado et al,[27] patient-related risk factors for this never event include morbid obesity and heavy intra-operative bleeding; surgery-related risk factors such as extended surgery, last-minute emergency operations, last-minute changes to the planned surgical technique, failure to follow the standard gauze-counting protocol and surgical complexity. Nursing and auxiliary personnel-related factors include shift changes during surgery, poor communication among operating room staff, and personnel burnout.[27]

Retained surgical items can manifest as acute inflammatory-like reactions or abscesses within days or weeks postoperatively, aseptic inflammation or exudative without infection, leading to nonspecific manifestations. Some individuals complain of pain and discomfort months or years after their procedure.[26]

Retained surgical items are uncommon medical challenges with associated immense complications and medico-legal implications for surgical team members and health institutions.[26-28] Safe medical practice globally requires that unintended surgical items inside a patient must be extracted, and if forgotten, it is referred to as a retained surgical item (RSI).[29] To eradicate the incidence of retained surgical objects, the following must be adhered to: initial counts should be performed before the surgical procedure, in the middle of the procedure when additional sterile items are added, before the surgeon closes the body cavity, and when the surgeon closes the skin to make the final count.[26]

2.1.4 Operating Room Fire

Operating room fires, though rare, pose heightened danger to patients and professionals.[30] According to the American Society of Anesthesiologists Task Force on Operating Room Fires,[31] operating room fire requires fire triad such as an oxidizer whose constituents are oxygen and nitrous oxide, an ignition source which involves electrosurgical or cautery devices, lasers, and heated probes, and fuel. Commonly implicated factors are ignition sources, light-emitting surgical devices (fiberoptic cables, headlamps, and light boxes).[30]

Patient safety culture (PSC) is an integral element that has an influence on patients' safety level within healthcare organizations.[10] According to Ingvarsdottir et al,[32] it involves reducing the danger of harm by predicting errors and avoidable adverse events to protect patients from unintended injury. Prevention of this event thus involves reducing an oxidizer-enriched atmosphere near the surgical site, curtailing ignition and fuel sources.[33]

3.2 Factors Responsible for Under-reporting of Sentinel Events in the Operating Rooms

Several factors have been implicated in under-reporting of sentinel events generally, such as blame culture, poor leadership, lack of staffing, poor communication, fear of reporting sequel, human and work environment factors, the reporting system used, compliance with policy and procedure, fear of punitive action, and lack of understanding of patient safety events.[34] To overcome these barriers, inculcating a blame-free, non-punishment learning culture plays a significant role in increasing the reporting rate of these never events and directly improving the initiative of patient safety.[35]

2.3 Impacts of Sentinel Events

Sentinel events have an immense financial burden, which has been estimated at billions of dollars annually, as well as physiological and psychological damage to patients leading to diminishing or no trust in the healthcare systems.[36] In addition, the errors are associated with increasing patients' morbidity and poor quality of life.[8] Emotional distress, flat mood, and post-traumatic stress syndrome-like symptoms are experienced by surgeons, theatre nurses, and other health professionals involved in medical

errors.[37] These experiences not only affect surgical team members and their significant others but also the health institutions in terms of care delivery, clinical performance, and patient safety.[38] In addition, these surgical incidents may have long-lasting effects that individuals may never fully recover from or may even consider changing their line of practice.[37] Some health professionals even engage in abusive use of illicit drugs,[39] alcohol addiction, decreased quality of life, flat affect, and burnout.[40]

2.4 Preventive Measures to Sentinel Events

An appropriately planned communication between the patient and surgical team members has profound role of mitigating this events.[7] Furthermore, prompt identification of patients who are at risk of severe hemorrhage and intubation issues is germane.[41] Proper scheduling of procedures, clear communication with other colleagues, ensuring no discrepancies with the surgical safety checklist, and screening the progress in the surgeries and reporting to the board can enhance patients' safety.[42]

3.0 Gaps in the Current Literature

Existing findings revealed that despite the significant prevalence of sentinel event in the surgical world, it is grossly under-reported in Nigeria. The under-reporting of sentinel events generally can be due to blame-game culture, poor leadership, lack of staffing, poor communication, fear of unknown outcomes after reporting, fear of punitive action, and lack of understanding of patient safety events.[34] To overcome these barriers, inculcating a blame-free, non-punishment learning culture plays a significant role in increasing the reporting rate of these never events and directly improving the initiative of patient safety.[35]

4.0 Implications for Nursing Practice, Education, Research and Policies

Nursing Practice

The operating room is a high-risk, fast-paced environment where every second and action counts. Consequently, reviewing the patterns, contributing factors, and impacts of sentinel events is vital. This review will serve as a framework to improve professional accountability and foster a culture of safety for vulnerable surgical patients. It will also enhance honest incidence reporting among operating room nurses which will translates to better care on the overall to the general public. It will enhance surgical room nurses skill in observation and documentation.

Nursing Education

This review will serve as a clarion call to relevant stake holder to inculcate it in the curriculum and guide learning content to both students and staff. It will also guide in-service training programme content to nursing staffs in the system.

Nursing Research

This review will add to body of knowledge of existing literature. From review of this concept, findings shows that there is limited research study on it. Thus, it will stimulate research interest towards this topic.

Nursing Policies

It will ensure that there is a uniform and standard practice of safety in the aspect of ensuring relevant stake holders develop appropriate protocols and tools to ensure sentinel free event occurrence in the operating rooms.

5.0 Conclusion

It is pertinent for surgical-team members to be knowledgeable about patient safety. Also, standard practice protocol should be put in place to limit sentinel events in the operating rooms. Favourable working condition in terms of conducive working environment, good communication, positive team spirit and decreased workload to avoid burnout and fatigue is essential to limit the rate of these errors.

Declaration by Authors

Ethical Approval: There is no ethical approval as this a review article

Acknowledgement: Nil

Source of Funding: Nil

Conflict of Interest: There is no conflict of interest

References

1. Singh CB, Arulappan J. Operating Room Nurses' Understanding of Their Roles and Responsibilities for Patient Care and Safety Measures in Intraoperative Practice. SAGE Open Nurs. 2023;13(9). doi: 10.1177/23779608231186247.
2. Peate I. The Principles of Surgical Care: Intraoperative care. British Journal of Healthcare Assistants, 2015; 9(11):534–537. 10.12968/bjha.2015.9.11.534
3. Rodziewicz TL, Houseman B, Vaqar S, Hipskind J. Medical Error Reduction and Prevention.

[Updated 2024 Feb 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK499956/
4. Nwosu ADG, Ossai E, Ahaotu F, Onwuasoigwe O, Amucheazi A, Akhideno I. Patient Safety Culture in the Operating Room: a Cross-Sectional Study Using the Hospital Survey on Patient Safety Culture (HSOPSC) Instrument. BMC Health Serv Res. 2022;22(1):1445. doi: 10.1186/s12913-022-08756-y.
5. Patra KP, De Jesus O. Sentinel Event (Archived) [Updated 2023 Mar 29]. In: StatPearls Treasure Island (FL): StatPearls Publishing.
6. Zaslow J, Fortier J, Garber G. The Problem with 'Never Events'.BMJ Quality and Safety. 2024;33(9):559-562.doi.1136/bmjqs-2024-017395.
7. Jung JJ, Juni P, Lebovic G, Grantcharov T. First Year Analysis of the Operating Room Black Box Study. Ann Surg. 2020;271(1):122–7. doi: 10.1097/SLA.0000000000002863.
8. Altalhi N, Alnaimi H, Chaouali M, Alahmari F, Alabdulkareem N, Alaama T. Top four Types of Sentinel Events in Saudi Arabia during the Period 2016–19. Int J Qual Health Care.2021;33(1):mzab026. doi: 10.1093/intqhc/mzab026.
9. Elliott RA, Camacho E, Jankovic D, Sculpher MJ, Faria R. Economic Analysis of the Prevalence and Clinical and Economic Burden of Medication Error in England. BMJ Qual Saf. 2021;30:96–105. doi: 10.1136/bmjqs-2019-010206.
10. Binkheder S, Alaska YA, Albaharnah A, AlSultan RK, Alqahtani NM, Amr AA, et al. The Relationships between Patient Safety Culture and Sentinel Events Among Hospitals in Saudi Arabia: a National Descriptive Study. BMC Health Serv Res. 2023, 18;23(1):270. doi: 10.1186/s12913-023-09205-0.
11. Hajjaj OI, Zaslow J, Sherif RE, Héroux DL, Mimeault RE, Fortier JH, et al. Wrong-site, Wrong-Procedure, and Retained Foreign Object Events in Out-Of-Hospital Settings: Analysis of Closed Medico-Legal Complaints in Canada (2012-2021). Patient Saf Surg. 2025; 10,19(1):11. doi: 10.1186/s13037-025-00432-4.
12. The Joint Commission. The Joint Commission releases sentinel event data on serious adverse events at US healthcare organizations. April 4, 2023. https://www.jointcommission.org/resources/news-andmultimedia/news/2023/04/the-joint-commission-releases-sentinel-event-data. Accessed May 31, 2023.
13. Parmar D, Patel N, Kenneth-Ogah C, Yazdouni S, Desai C, Raveshia D, et al. Root Causes of Surgical Never-Events: A Systematic Review. Patient Saf Surg. 2026, 8;20(1):3. doi: 10.1186/s13037-025-00474-8.
14. Wiegmann DA, Wood LJ, Cohen TN, Shappell SA. Understanding the "Swiss Cheese Model" and Its Application to Patient Safety. Journal Patient Safety. 2022,1;18(2):119-123. doi: 10.1097/PTS.0000000000000810.
15. Croke L. Preventing Falls Among Perioperative Patients. AORN Journal. 2022; 116(5):p8-p10. https://Doi.Org/10.1002/Aorn.13816
16. Prielipp RC, Weinkauf LJ, Esser TM, Thomas BJ, Warner MA. Falls From the O.R. or Procedure Table. Anesthesia&Analgesia,2017;125(3):846-851.doi: 10.1213/ANE.0000000000002125.
17. Pellegrino A, Brook K. Patient Falls in the Operating Room: Why Is This Still a Problem in 2024?. Journal of Patient Safety, 2024;(20)6: p e87-e90. DOI: 10.1097/PTS.0000000000001248
18. Okuyucu K. Enhancing patient safety: Identifying Fall Risks During Patient Transfers in Operating Rooms. BMC Health Serv Res. 2025;25: 557
19. Tan J, Krishnan S, Vacanti JC, Wheeler KK, Giovannini ST, Pimentel MP, et al. . Patient Falls in the Operating Room Setting: An Analysis of Reported Safety Events. J Health Risk Manag. 2022;42:9–14
20. Nwosu A. The Horror of Wrong-Site Surgery Continues: Report of Two Cases in a Regional Trauma Centre in Nigeria. Patient safety in surgery.2015;9(1):6. doi: 10.1186/s13037-014-0053-2.
21. Hanchanale V, Rao AR, Motiwala H, Karim OM. Wrong site surgery! How can we stop it? Urol Ann. 2014;6(1):57-62. doi: 10.4103/0974-7796.127031.
22. Agency for Healthcare Research and Quality, US Department of Health and Human Services. 2019. Wrong-Site, Wrong-Procedure, and Wrong-Patient Surgery. PSNet Rockville (MD)
23. Lenworth MJ. Wrong surgery. Retention of Foreign Object Top 2023 Sentinel event lists.

2024. https://www.facs.org/for-medical-professionals/news-publications/news-and-articles/bulletin/2024/julyaugust-2024-volume-109-issue 7
24. Lenworth MJ. Study Analyzes Wrong-Site Surgery Data in Medical Malpractice Complaints. 2023. https://www.facs.org/for-medical-professionals/news-publications/news-and-articles/bulletin/2023/june-2023-volume-108-issue-6/study-analyzes-wrong-site-surgery-data-in-medical-malpractice-complaints/
25. Copeland AW 2023. Retained Surgical Sponge (Gossypiboma) and Other Retained Surgical Items: Prevention And Management.
26. Zejnullahu VA, Bicaj BX, Zejnullahu VA, Hamza AR. Retained Surgical Foreign Bodies after Surgery. Open Access Maced J Med Sci. 2017;5(1):97-100. doi: 10.3889/oamjms.2017.005.
27. Maldonado MD, Romero-Aibar J. Evaluation of the Clinical-Immuno-Radiological And Legal Consequences in the Presence of Post-Surgical Gossypiboma. Journal of Forensic and Legal Medicine, 2023;98, https://doi.org/10.1016/j.jflm.2023.102574.
28. Al Ani AH, Hammami MB, Adi OMM. Retained Surgical Items in Inguinal Canal: A Case Report and Literature Review. Open Access Maced J Med Sci.2018 23;6(11):2165-2167. doi: 10.3889/oamjms.2018.377.
29. Romano PS, Gibbs VC. Retained Surgical Items: Definition and Epidemiology. 2024. PSNet. Rockville (MD): Agency for Healthcare Research and Quality, US Department of Health and Human Services.
30. Attia MM. Prevalence and Root Causes Of Operating Room Fires in the United States 2014-2024. Patient Saf Surg. 2025;2,19(1):18. doi: 10.1186/s13037-025-00441-3.
31. American Society of Anesthesiologists Task Force on Operating Room Fires; Caplan RA, Barker SJ, Connis RT, Cowles C, de Richemond AL, Ehrenwerth J,et al. Practice Advisory for the Prevention and Management of Operating Room Fires. Anesthesiology.2008;108(5):786-801. doi: 10.1097/01.anes.0000299343.87119.a9. .
32. Ingvarsdottir E, Halldorsdottir S. Enhancing Patient Safety in the Operating Theatre: from the Perspective of Experienced Operating Theatre Nurses. Scandinavian Journal of Caring Sciences,2018;32(2), 951–960. https://doi.org/10.1111/scs.12532
33. Daane SP, Toth BA. Fire in the Operative Room: Principles and Prevention. Plastic and ReconstructionSurgery.2005;115(5):73e-75e.https://doi.org/10.1097/01.prs.0000157015.82342.21
34. Kaud Y, O'Connor P, O'Malley R, Dunne R, Lydon S. A Scoping Review of Patient Safety Research Carried Out in Saudi Arabian Hospitals. IJQHC Commun. 2022; 2(2):lyac014. doi: 10.1093/ijcoms/lyac014.
35. Amaniyan S, Faldaas BO, Logan PA, Vaismoradi M. Learning from Patient Safety Incidents in the Emergency Department: A Systematic Review. J Emerg Med. 2020;58:234–244. doi: 10.1016/j.jemermed.2019.11.015.
36. Tariq RA, Vashisht R, Sinha A, Scherbak Y. Medication Dispensing Errors And Prevention. [Updated 2022 Jul 3]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022. https://www.ncbi.nlm.nih.gov/books/NBK519065.
37. Pinto A, Faiz O, Bicknell C, Vincent C. Acute Traumatic Stress among Surgeons after Major Surgical Complications. Am J Surg .2014;208:642–647
38. Seys D, Wu AW, Van Gerven E, Vleugels A, Euwema M, Panella M et al. Health Care Professionals as Second Victims after Adverse Events: A Systematic Review. Eval Health Prof. 2013;36:135–162
39. Pinto A, Faiz O, Bicknell C, Vincent C. Surgical Complications and their Implications for Surgeons' Well-Being. Br J Surg. 2013;100:1748–1755
40. Balogun JA, Bramall AN, Bernstein M. How Surgical Trainees Handle Catastrophic Errors: A Qualitative Study. J Surg Educ. 2015;72:1179–1184
41. Woodman N, Walker I. 2016. World Health Organization Surgical Safety Checklist. World Federation of Societies of Anesthesiologists. ATOTW.
42. Rothrock JC. 2018. Alexander's Care of The Patient in Surgery-e-Book. Elsevier Health Sciences.