Alqalam Journal of Medical and Applied Sciences. 2025;8(3):1946-1951
https://doi.org/10.54361/ajmas.258397

Original article

Reasons for Cancellation of Operation on the Day of Intended Surgery in Tripoli University Hospital, Libya

Dalal Almghairbi[1]*, Zenab Elfzzani[2], Soad Abouessa[3], Khalid Aljarmi[3]

[1]*Department of Anaesthesia and Critical Care, Faculty of Medical Technology, University of Zawia, Libya*
[2]*Department of Paediatrics, Faculty of Medicine, University of Zawia, Libya*
[3]*Tripoli University Hospital, Tripoli, Libya*
Corresponding author: *D.almghairbi@zu.edu.ly*

Abstract
Frequent cancellations of scheduled operations are a major reason for ineffective use of operating room time and the wastage of valuable resources. These cancellations not only disrupt hospital operations but also cause emotional distress for patients and negatively impact the perceived quality of healthcare services. In Libya, the reasons for surgical cancellation remain unknown. The current study aims to investigate the causes behind the cancellation of scheduled operations on the day of surgery (for both adult and paediatric patients) at Tripoli University Hospital (TUH) in Libya. A prospective observation study was conducted over six months, from June to December. Data was collected by using a standardised form completed by anaesthetists on the day of surgery. The data collection form is divided into administrative/logistic causes, medical reasons of the patient, staff-related causes, patient-related reasons, other causes that led to case cancellation, and whether a preoperative visit by anaesthetists had been done. A Pareto chart has been used to identify the main reasons that accounted for 80% of avoidable surgical cancellations, thereby guiding future improvement strategies. A total of 181 of the scheduled operations were cancelled. Many patients were female, and 7.2% were paediatric surgery patients. (82.3 %) did not suffer from chronic illness, and notably, a greater proportion (98.3%) of the patients had no preoperative anaesthetic assessment. Many patients were scheduled under general anaesthesia, and 24.3% were scheduled for general surgery. Cancellations were mainly due to administrative reasons (64.1%), followed by patient-related causes (24.3%), and were less likely due to other reasons (9.9%). Among patient-related cancellations, the most frequent issue was patients not showing up. The foremost administrative cause was a hospital staff strike. Among other causes, the unavailability of ICU beds was the most mentioned reason. This study highlights the key factors contributing to surgical cancellations at TUH. Addressing these reasons mainly through improved preoperative preparation, better resource allocation, and targeted interventions can improve the efficiency of surgical services, minimise delays, and improve overall patient care. Further research and focused strategies are recommended to optimise hospital surgical services.
Keywords. Cancellation of Operation, Surgery, Tripoli University Hospital, Libya.

Introduction

The World Health Organisation (WHO) reported that 1:3000 patients experienced harm from medical care. It has been estimated that 230 million major operations are carried out worldwide each year [1]. Despite much being paid on operation departments (up to 30.1%) of the hospital's budget, the rate of operation cancellation is still high [1]. Schofield et al [2] expected that 60% of elective surgeries that were cancelled on the day of operation were possibly avoidable. Repeated cancellations are the main reason for ineffective use of operating room time and waste resources [3-6]. It also leads to emotional distress for patients and causes a negative perception of the quality of care. Therefore, the healthcare system and its influence should be organised and improved. This will increase the efficient use of hospital resources and patient satisfaction. To improve the quality of hospital management and patient care can be assessed by the rate of surgical cancellations.

Previous studies showed that the availability of theatre time is one of the main reasons for surgical cancellation [2,7]. Other studies [3,8,9] reported many other reasons, such as: abnormalities discovered on the preoperative laboratory examination; inconvenience in scheduling; no postoperative bed; cancellations by the patient; change in patient clinical status; anaesthetic cancellations by the surgeons. However, the reasons for surgical cancellation in Libya remain unknown. This study aimed to find out the causes of cancellation of cases scheduled on the day of surgery (for adults and paediatrics) in Tripoli University Hospitals (TUH) in Libya. It also aimed to detect and analyse the causes of cancellation operation start-up time in TUH in Libya, and to explore the intervention and improvement measures.

Methods

A prospective observational study was carried out in TUH between June 1, 2022, and December 31, 2022, to find out the number of cancelled day-case inpatient elective surgeries, including adults and paediatric. TUH is one of the main teaching hospitals in western Libya (1200 resource beds, 17 operating rooms). Operating lists are usually submitted to the operative coordinator for every working day on the previous day. Elective operating lists begin at 8:00 am and are required to be finished by 2:00 pm.

Received*: 03-08-2025 -* ***Accepted****: 01-09-2025 -* ***Published****: 10-09-2025*

Definition of Case Cancellation
A cancelled case was defined as any operation that is either scheduled on the final theatre list for that day or is subsequently added to the list and is not performed on that day.

Definition planned surgery
It is defined as a surgery with preoperative examinations performed by a surgeon.

Inclusion criteria
All patients planned for various elective surgeries with full information during the study period were included in the study.

Exclusion criteria
All operations scheduled for elective surgery but were done as an emergency operation, public holidays, weekends, and local anaesthesia were excluded from the study.

Data collection
To promote reliability, a standard, pre-designed data collection form was used for data collection. On each day of surgery, anaesthetists completed the form. The data collection form is divided into administrative/logistic causes, medical reasons of the patient, staff-related causes, patient-related reasons, other causes that led to case cancellation, and preoperative visit by anaesthetists.

Ethics
As this study was deliberated as a quality assurance project by the Human Research Ethics Committee of the TUH, it did not require ethical approval.

Patient consent
The study information sheet and letter of invitation were sent to the participants by email. Consent from each participant was obtained verbally before taking part.

Data analysis
The data were checked, cleaned, entered into Microsoft Excel, and analysed using Statistical Package for the Social Sciences (Windows version 26; SPSS Inc., Chicago IL, US). SPSS software. The Pareto principle has been used to identify reasons that account for 80% of preventable surgical cancellations and to set up future improvement efforts.

Results
The overall cancellation number during the period from June 2022 to December 2022 was 181 cancellations of the scheduled operations. The majority of study cases (144; 79.6%) were inpatients (admitted for 2 days or longer). The demographic features of the study population are presented in (Table 1).

Table 1: Demographic features of the study population

Demographic features	No. of cases (%)
Gender	
Female	96 (53)
male	85 (47)
Patient has a chronic illness	
Yes	28 (15.5)
No	149 (82.3)
Patient not seen	3 (1.7)
Preoperative visit	
Yes	3 (1.7)
No	178 (98.3)
Speciality of operation	
ENT	18 (9.9)
General Surgery	44 (24.3)
Gynecology	27 (14.9)
Neurosurgery	33 (18.2)
Ophthalmic surgery	5 (2.8)
Orthopedic surgery	12 (6.6)
Pediatric surgery	13 (7.2)
Thoracic Surgery	2 (1.1)
Urology surgery	27 (14.9)

Received*: 03-08-2025 -* ***Accepted****: 01-09-2025 -* ***Published****: 10-09-2025*

Type of anaesthesia	
GA	156 (86.2)
GA/RA	12 (6.6)
LA	5 (2.8)
RA	8 (4.4)

GA; general anaesthesia, RA; regional anaesthesia, LA; local anaesthesia

There was a wide variety of reasons for surgery as shown in (Figure 1).

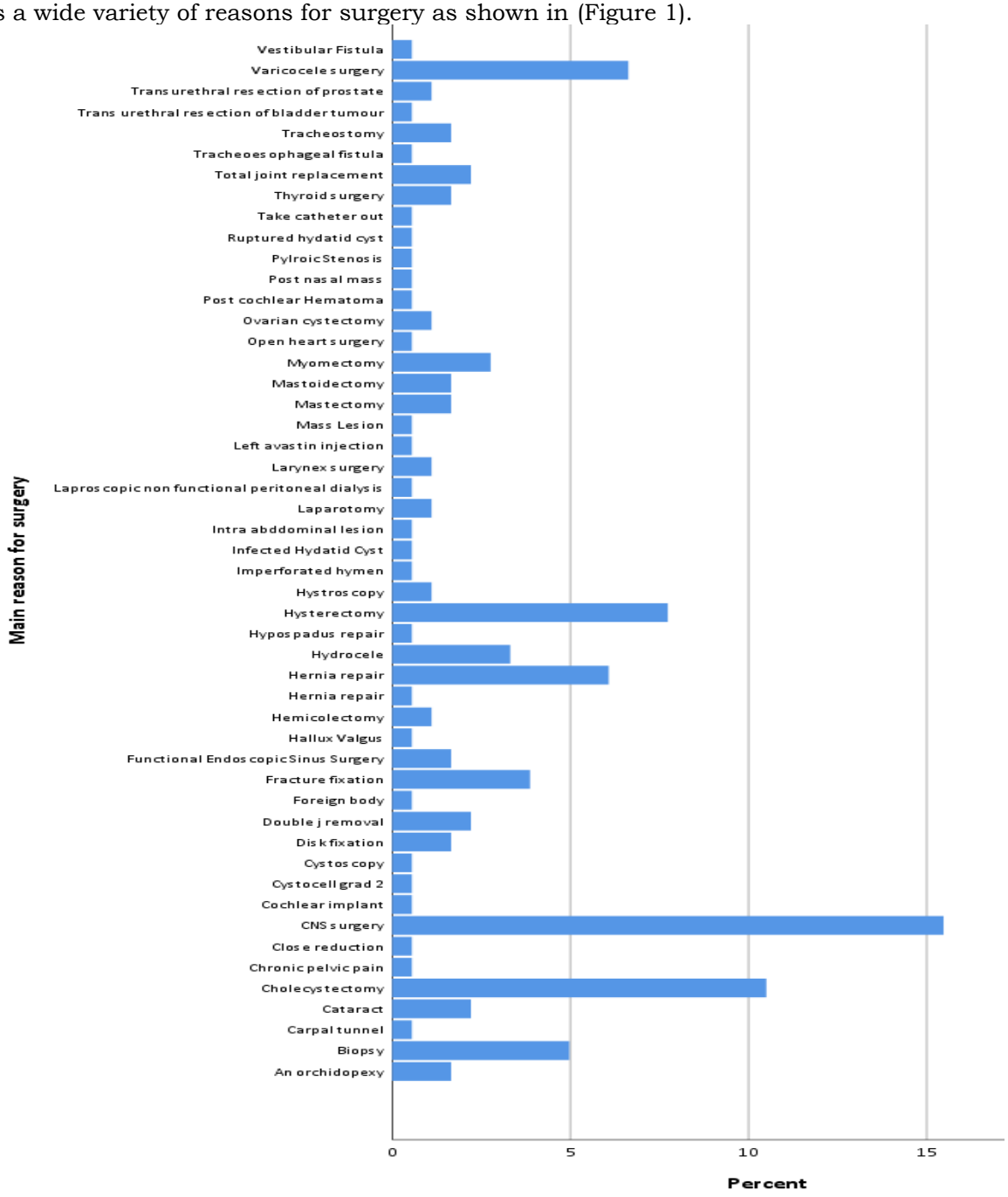

Figure 1. Counts and reasons for cancellation of scheduled operation in Tripoli University Hospital (TUH)

There were many different reasons found. Of those, 116 (64.1%) of cancellations were due to administrative causes. Other reasons for cancellation included a wide variety of hospital and patient-related reasons such as: change of management plan, unavailability of the surgeon, patient refused, patient not fasting, and patient not fit due to illness, and death of the patient. (Table 2) presents numbers and rates of cancellation according to the reason after patients were admitted to the Tripoli University Hospital (TUH).

Received*: 03-08-2025 -* ***Accepted****: 01-09-2025 -* ***Published****: 10-09-2025*

Table 2: Frequency and percentage of day of surgery cancellations by categorical reasons

Reason for cancellation	No. of cases (%)
Patient-related causes	44 (24.3)
did not show up for surgery	12 (6.6)
changed mind about surgery	1 (0.6)
uncontrolled hypertension	7 (3.8)
respiratory tract infection	9 (5)
ischemic heart disease	1 (0.6)
abnormal blood test results	8 (4.4)
urinary tract infection	2 (1.1)
not fasting	2 (1.1)
not fit for transfer	1 (0.6)
passed away	1 (0.6)
Administrative causes	116 (64.1)
hospital workers strike	20 (11)
no anaesthetics/ technician	33 (18.2)
no instrument	2 (1.1)
no oxygen	3 (1.7)
late Hour	24 (13.3)
late/no surgeon	33 (18.2)
The surgeon cancelled the entire list	1 (0.6)
Other causes that led to case the cancellation	18 (9.9)
No ICU bed	7 (3.9)
anaesthesia conferences	3 (1.7)
Surgery is no longer indicated	6 (3.3)
unclear surgical plan	1 (0.6)
unconfirmed Diagnosis	1 (0.6)

ICU: intensive care unit.

A Pareto analysis was done to prioritize the recognized reasons for cancellation after admission to the hospital according to frequency. The 11 reasons responsible for 80% of operation cancellation after admission to TUH were no anaesthetics, late hour, workers on hospital strike, unavailable surgeon, patient failed to show up, late surgeon, abnormal blood test results, no ICU bed, late hours/late surgeon and high blood pressure, changed surgical plan (Figure. 2).

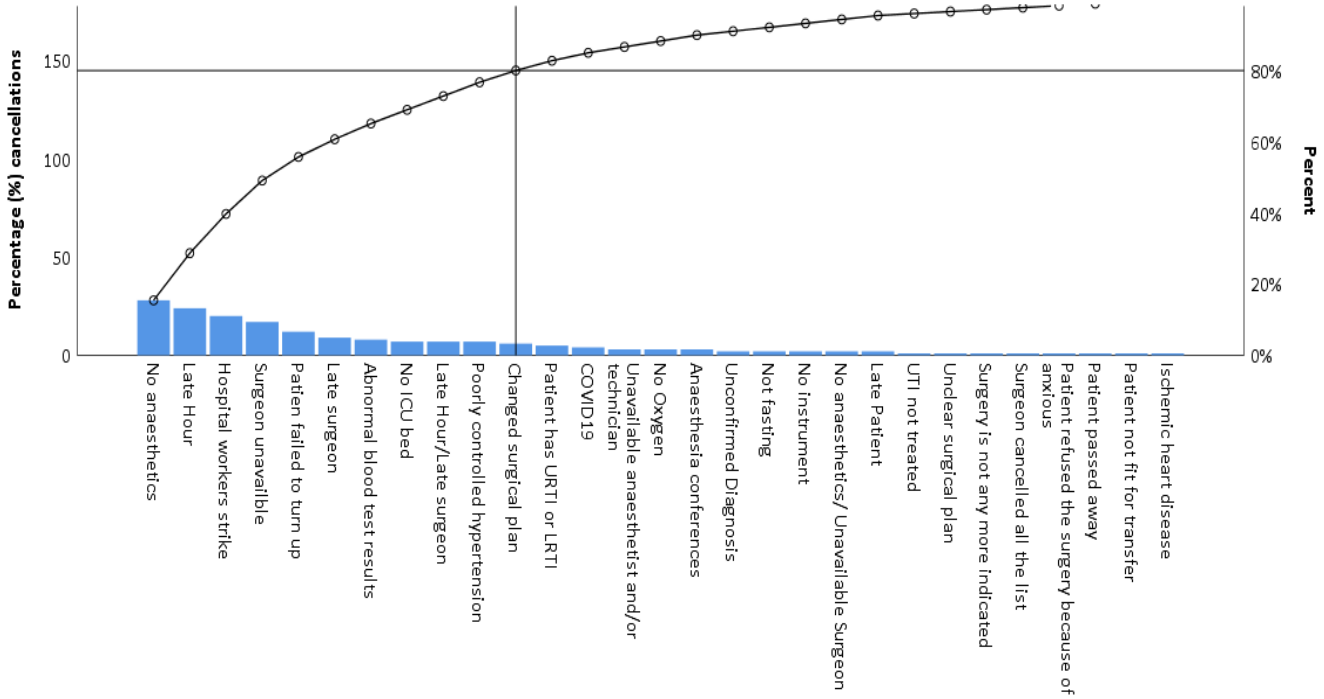

Figure 2: Pareto chart of operative cancellations by identified reasons after admission

Discussion

The current study assessed the causes of surgical cancellations in Tripoli University Hospital (TUH) in Libya. There were 181 cancellations of the scheduled operations. The main findings were that most of the patients were female, had no chronic illness, and a greater proportion (98.3%) of the patients had no preoperative

Received*: 03-08-2025 -* ***Accepted****: 01-09-2025 -* ***Published****: 10-09-2025*

visit. Additionally, most patients were anaesthetised by general anaesthesia, 24.3% of all scheduled operations were general surgery, and 7.2% were paediatric surgery.

There are three main causes for the surgery cancellation, in descending order of frequency, as follows: administrative issues, patient-related issues, and other causes. This was consistence with other findings from other studies conducted in Saudi Arabia, Lebanon, Jordan, and Spain [3,10-12].

In this study, most of the day cancellations were due to possible avoidable reasons. Lack of availability of anaesthetists and surgeons (18%) was the most common reason found in the present study. This was because of their sudden leave on a working day or study. It is also due to important meetings, which could not be disregarded, and other administrative commitments. It is further noted that cancellation was due to emergency cases during the elective lists. As they were called for assistance in an emergency and therefore led to a delay and even to the postponement of the elective cases list. These were in agreement with other studies [8,13-16].

The second most common reason found was late hours. Previous studies have shown that overrun of previous surgery and unintentionally booked operation lists were correlated with theatre time overrun [2,4,9]. Previously, Pandit et al [17] reported that lists overbooking occurs because of waiting list pressure and to avoid any perception that the surgical team was not working very well. In addition, inappropriate patient preparation for surgery and lateness of start of operation lists have a progressive impact on theatre time wasting. It has been suggested that improving methods of booking and allocating theatre time will increase the quality improvement strategies of operation time [2]. In contrast, Farhanul Huda [8] reported that the experience of surgeons, unanticipated complications and technical problems in surgical equipment could influence theatre time.

Strikes by hospital workers accounted for 17.2% of the administrative causes of cancellations in the present study. Similarly, Ojo et al [18] reported that this reason was considered for about half of the hospital-related causes. In this situation, hospital management and health ministries should be called for important policies to stem hospital-related wastages.

Patient-related cancellations accounted for 24.3% of all cancellations in this study. Patients not showing up on the operation day is the most common reason in this category (6.6%). However, it could not elicit the reasons why it happened. The reason for the last-minute cancellation by patients is particularly disconcerting. It may be because of the patient's last-minute doubts and fears [2]. In addition, a study reported that 54.3% of the patients were absent due to unawareness of the date of their operation, and some have socio/economic problems [19]. Whatever the reasons, effective communication between patients and their surgical team will minimize such type of cancellations.

Cancellations on medical grounds were also reported in 9.9% of the cases in this study and the probable ones were uncontrolled blood pressure, upper respiratory tract infection, and abnormal blood investigation. A similar percentage (10.5%) was reported in a Nigerian study [13]. In contrast, other studies [20] [21] found a higher percentage (80%) of surgical cancellations on the day of operation due to medical reasons. This variation is likely due to their large sample size and exclusive focus on one speciality.

Sometimes cancellation may become necessary, as in the case of a limited number of beds, as found in the present study. In the same line, Jonnalagadda et al [22] and Schofield et al [2] reported that the non-availability of beds in the recovery room led to the cancellation of 15% and 18.1%, respectively, of routine and emergency operations. As shown in a previous study [23], the unavailability of recovery beds is due to being unreserved before admission and reserved after the patient is admitted. On the other hand, it is sometimes booked early but it can be taken for another critical case. A possible solution could be to provide more beds for surgical patients to improve the quality of the healthcare system.

Using Pareto principles, the current study found that there are four main common causes responsible for cancellation. These causes include no anaesthesia, late hours, workers on hospital strikes, and unavailable surgeons. Any reduction in those causes will affect the overall rate of surgical cancellations. In contrast, Sahroni et al [23] reported that overbooking, patient no-show, unfitness for anaesthesia, and unfitness for surgery were the four most common causes of cancellation. On the other hand, Kaddoum et al [11] noted that no financial clearance, incomplete medical evaluation, patient not showing up for surgery, or behind schedule, and no beds available were the most common causes of cancellation.

Conclusion

During the study period, elective operation cancellation on the scheduled surgery date was observed. Most of the reasons were administrative-related. It That found to be due to poor communication and lack of organization among different departments that participate in the effective operation of the operating room. All of these reasons can be avoided by taking appropriate administrative measures and documenting as adverse effects of the hospital.

Limitations

The limitations of this study were that the data were collected through a self-administered questionnaire, which may result in response bias. Another limitation is that the rate of case cancellation was not calculated

Received*: 03-08-2025 -* ***Accepted****: 01-09-2025 -* ***Published****: 10-09-2025*

because some of the patients' demographic data was missing. Finally, the results were not generalizable as they focused on one hospital in the Libyan healthcare system, and further studies are needed.

Implications to practice

The current study underscores the critical importance of establishing a comprehensive preoperative assessment protocol and dedicated clinics to optimize surgical outcomes. It further emphasizes the need to enhance communication and coordination among the surgical team, including the surgeon, anesthetist, and operating room (OR) staff. To ensure appropriate case selection and minimize intraoperative risks, all patients—particularly those with complex conditions—should be evaluated by consultants prior to inclusion on the surgical scheduling list. Overbooking of the operative schedule should be strictly avoided to maintain workflow efficiency and patient safety. Additionally, the causes of surgical cancellations must be systematically reviewed and addressed on a regular basis to improve planning and reduce procedural disruptions.

Conflict of interest. Nil

References

1. World Health Organization. 10 datos sobre seguridad del paciente [Internet]. Geneva: World Health Organization; 2023 [cited 2023 Jan 6]. Available from: https://www.who.int/news-room/facts-in-pictures/detail/patient-safety.
2. Schofield WN, Rubin GL, Piza M, Lai YY, Sindhusake D, Fearnside MR, et al. Cancellation of operations on the day of intended surgery at a major Australian referral hospital. Med J Aust. 2005;182(12):612-5.
3. Sultan N, Rashid A, Abbas SM. Reasons for cancellation of elective cardiac surgery at Prince Sultan Cardiac Centre, Saudi Arabia. J Saudi Heart Assoc. 2012;24(1):29-34.
4. Chiu CH, Lee A, Chui PT. Cancellation of elective operations on the day of intended surgery in a Hong Kong hospital: point prevalence and reasons. Hong Kong Med J. 2012;18(1):5-10.
5. Lee KJ, Kim YS, Yang J, Jeon SM, Park I, Lee BG. Analysis of the reasons why patients cancel shoulder surgery despite recommendation. Clin Shoulder Elb. 2022;25(2):121-6.
6. Dhafar KO, Ulmalki MA, Felemban MA, Al-Gethami HM, Al-Baddah IH, Alenizi AF, et al. Cancellation of operations in Saudi Arabian hospitals: Frequency, reasons and suggestions for improvements. Pak J Med Sci. 2015;31(5):1027-32.
7. Al Talalwah N, McIltrot KH, Al Ghamdi AM. Elective surgical cancellations in a tertiary hospital in the Middle East: quality improvement process. J Perianesth Nurs. 2019;34(2):310-21.
8. Huda F, Pandey K, Anshul A. A retrospective analysis of reasons for cancellation of elective surgery in a teaching hospital. Int J Sci Study. 2014;2(2):28-30.
9. Hussain AM, Khan FA. Anaesthetic reasons for cancellation of elective surgical inpatients on the day of surgery in a teaching hospital. J Pak Med Assoc. 2005;55(9):374-8.
10. Abeeleh MA, Abu Ali HA, Bani Hani O, Bani Hani M, Al Smady MM, Bani Hani A, et al. Reasons for operation cancellations at a teaching hospital: prioritizing areas of improvement. Ann Surg Treat Res. 2017;93(2):65-9.
11. Kaddoum RN, Fadlallah R, Hitti EA, El-Jardali F, El Eid GH. Causes of cancellations on the day of surgery at a Tertiary Teaching Hospital. BMC Health Serv Res. 2016;16:259.
12. González-Arévalo A, Gómez-Arnau JI, delaCruz FJ, Marzal JM, Ramírez S, Corral EM, et al. Causes for cancellation of elective surgical procedures in a Spanish general hospital. Anaesthesia. 2009;64(5):487-93.
13. Ezike HA, Ajuzieogu OV, Amucheazi AO. Reasons for elective surgery cancellation in a referral hospital. Ann Med Health Sci Res. 2011;1(2):197-202.
14. Kolawole IK, Bolaji BO. Reasons for cancellation of elective surgery in Ilorin. Niger J Surg Res. 2002;4(1-2):28-33.
15. Windokun A, Obideyi A. Audit of emergency theatre utilisation. Afr J Med Med Sci. 2002;31(1):59-62.
16. Hussain AM, Khan FA. Anaesthetic reasons for cancellation of elective surgical inpatients on the day of surgery in a teaching hospital. J Pak Med Assoc. 2005;55(9):374-8.
17. Pandit JJ, Carey A. Estimating the duration of common elective operations: implications for operating list management. Anaesthesia. 2006;61(8):768-76.
18. Ojo EO, Iregbulem LM, Nnabuko RE. The scope and utilization of day case surgery in a developing country. East Afr Med J. 2007;84(5):200-6.
19. Paschoal ML, Gatto MA. Rate of surgery cancellation at a university hospital and reasons for patients' absence from the planned surgery. Rev Lat Am Enfermagem. 2006;14(1):48-53.
20. Bamashmus MA, Haider T, Al-Kershy R. Why is cataract surgery canceled? A retrospective evaluation. Eur J Ophthalmol. 2010;20(1):101-5.
21. Kumar R, Gandhi R. Reasons for cancellation of operation on the day of intended surgery in a multidisciplinary 500 bedded hospital. J Anaesthesiol Clin Pharmacol. 2012;28(1):66-9.
22. Jonnalagadda R, Walrond ER, Hariharan S, Walrond M, Prasad C. Evaluation of the reasons for cancellations and delays of surgical procedures in a developing country. Int J Clin Pract. 2005;59(6):716-20.
23. Sahraoui A, Elarref M. Bed crisis and elective surgery late cancellations: an approach using the theory of constraints. Qatar Med J. 2014;2014(1):1-6.
24. Grosfeld-Nir A, Ronen B, Kozlovsky N. The Pareto managerial principle: when does it apply? Int J Prod Res. 2007;45(10):2317-25.

Received: *03-08-2025* - ***Accepted***: *01-09-2025* - ***Published***: *10-09-2025*