

A Study on the Frequency and the Reasons for Cancellation of Surgical Operations in Khatam Hospital (Mashhad, Iran) in 2013

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ARTICLE INFO	ABSTRACT
<p>Article type: Original Article</p> <hr/> <p>Article history: Received: 10-June-2014 Accepted: 28-June-2014</p> <hr/> <p>Keywords: Hospital Operation Surgery cancellation</p>	<p>Introduction: Operations cancellation at the last minute is one of the main reasons of inefficiency and waste of resources in Hospitals. This study aims to investigate the reasons and the frequency of operations cancellations in Khatam-al-Anbia Eye Hospital (Mashhad-Iran) in 2013.</p> <p>Materials and Methods: In this descriptive and cross-sectional study, all canceled scheduled operations in 2013 in Khatam-al-Anbiya Eye Hospital were investigated and the data were recorded in a checklist. Study variables included: 1) the number of planned operations, 2) the number of canceled operations, 3) age, 4) gender and 5) the reason of operation cancellation. Data were analyzed using descriptive statistics and SPSS16.</p> <p>Results: Of 16512 operations scheduled during 2013, 329 cases (1.99 percent) were canceled. The reason of cancellation was not mentioned in (28.6 percent) of cases. Other reasons of operations cancellation included, in the order of importance, high-risk underlying disease (22.5%), medical advice ignorance from the patient's behalf (10.6%), change in clinical status (7.9%), prolongation of previous operations (7%), patient's dissatisfaction (5.8%), Patients' incomplete Nil Per Os (NPO) time (5.5%), inadequate equipment (4.6%), lack of lab tests and consultations (2.7%), diagnosis change (2.4%), surgeon's absence (1.8%), and incomplete admission documents (0.6%).</p> <p>Conclusion: In a high percentage of canceled cases, the reasons of operation cancellations had not been mentioned in the patient's file. A significant portion of these cancellations can be attributed to the patients' incomplete cooperation. Cancellations can be significantly reduced through providing the patient with enough instructions and explanations.</p>

► Please cite this paper as:

Ebrahimipour H, Shirdeh A, Rahimi ME, Meraji M, Hooshmand E, Pourtaleb A, et al. A Study on the Frequency and the Reasons for Cancellation of Surgical Operations in Khatam Hospital Mashhad, Iran in 2013. *Patient Saf Qual Improv.* 2014; 2(4):156-159.

Introduction

Nowadays, increasing costs of health care services has converted hospitals to the costly organizations so that about (50%) of current expenditures of governments are devoted to these systems (1).

Operating rooms efficiency is the main factor in determining hospital costs, so maximizing the operating rooms performance alongside quality improvement can lead to an increase in hospital financial capacity. Large hospitals use considerable

resources for managing operating rooms and attracting surgeons and operating room staff to perform surgeries on time (2, 3). However, Operations cancellation at the last minute is one of the main reasons of inefficiency and hospital resources waste (3- 5). Studies conducted in Hong Kong (6), Spain (7), Pakistan (8), India (9) and Australia (4) reported operations cancellation frequency ranging from four to 16.6 percent. The most important reasons of operations cancellation in these

hospitals included unavailability of operating theater time due to prolongation of previous operation (7), patient's non-attendance on the day of surgery (10), the patient's unpreparedness (9), inadequate postoperative Intensive Care Unit (ICU) beds, and change in patient's clinical status (9- 10).

In addition, studies conducted in Iran Uremia (11), Tehran (1), Yazd (12), and Sari (13), indicate that (10.9 to 18.6) percent of operations are canceled in the studied hospitals (1, 11, 13, 14). The most important reasons for operations cancellation in these hospitals included high-risk underlying disease (12), cancellation based on changes in patient's surgical plan, cancellation due to patient's problems, failure to make appointment in workday (morning) (11, 12).

Operations' postponement seems simple from one aspect but its consequences and subsequent problems can be perceived by taking a deeper look. This imposes additional costs on the patient, health systems and insurance organizations on one hand, and harms patients with emergent need of hospital services due to ineffective hospital beds occupation.

In patients' regards, operations postponement can lead to emotional and mental problems (6). Also, it is not wise for infant and aged patients to spend long hours in fasting waiting for surgical operation.

Operation cancellation can result in operating room disorganization, waste of time, ineffective traffic in the operation room, unnecessary occupation of hospital beds, increased costs and increased risk of hospital infections. Considering the results of certain studies which point out the inevitability of some of these cancellations, the limited number of studies conducted in Iran on this subject, and the lack of related researches in our province, the results of the present study can be useful to find the frequency and the reasons for operations cancellation.

Materials and Methods

Since Khatam Hospital is the only referral center of Ophthalmology in the East, it was selected by the research team to conduct this descriptive cross sectional study. Canceled all the canceled operations were investigated regardless of the reason.

Of 16512 operations conducted during the research period from March 21 (2012) to March 19 (2013) a total of 329 cases (2%) were canceled. All the data of canceled operations were extracted from patients' files.

In order to design the checklists, related studies in Iran and all over the world were first investigated and primary categorization was performed. Then, 50 profiles were studied; upon which the primary checklist was based. Reasons for operation cancellation were divided into 29 cases in checklist in the beginning and were reduced to 12 cases after final merge (Table 1).

The validity of the questionnaire was assessed through content validity, which was carried out by a team consisting of five experts with relevant qualifications and with at least one published paper on

the subject, three Professors who studied hospital administration, four clinical governance hospital committee members, and two staff experts of the state universities health viceroys.

Reliability was evaluated parallel to testing, so that two researchers independently entered 30 cases of operations in the checklist simultaneously, after which the results were compared (kappa (0.8)). Data were extracted by two researchers and were analyzed descriptively (frequency, percent) using the statistical package of SPSS version 11.5. Significance level was considered (0.05) in all tests.

Results

Studying the patients' files, we found that the reason for cancellation in (28.6) percent of cases had not been mentioned in the patient's file.

The average age of patients whose operations were canceled was (48.4) years and their age ranged from one month to 108 years. Of all the patients, 134 were women (42%) and 191 were men (58%).

Table1: The reason and percent of operation cancellation at Khatam Hospital

Reasons of operations cancellation	Percent
High-risk underlying disease	22.5%
Patient's non-attendance	10.6%
Change in clinical status	7.9%
Lack of Operation Theater time	7%
Patient's dissatisfaction	5.8%
Patients' incomplete NPO time	5.5%
Inadequate equipment	4.6%
Delayed preparation of lab tests and consultations	2.7%
Diagnosis change	2.4%
Non-attendance of surgeon	1.8%
Incomplete admission documents	0.6%

Table 2 shows the percent of operation cancellation at Khatam Hospital by age and sex.

Table2: The distribution of age and sex in cases with canceled operations at Khatam Hospital

Age	Sex		Total		
	Male	Female	Male	Female	
Under 20	32	20	61.53	38.46	52
21-50	58	45	56.31	43.68	103
51-80	61	46	57	43	107
Above 80	40	23	63.49	36.50	63
Total	191	134			325

Discussion

This descriptive and cross-sectional study investigated the reasons of all scheduled operations canceled in Khatam Eye Hospital.

In the present study, high-risk underlying diseases were the main reason for operations cancellation (22.5%). This is similar to the findings of the study conducted in Yazd Iran, where 68.9 percent of anesthesia-related reasons were related to high-risk underlying diseases (12). High-risk underlying diseases

are one of the important reasons for operations cancellation. This occurs when the physician schedules for the operation without considering the patient's underlying diseases or when the patient's condition is not favorable for operation on the day of surgery (13).

To solve this problem and to reduce canceled operations frequency, it is recommended to look for high-risk underlying diseases in all patients to whom surgical operation is suggested. The second most frequent reason for cancellation is patient's non-attendance (10.6%). In a study conducted in Spain, Australia and teaching hospitals (Yazd, Iran) (4, 12) this factor was reported as one of the reasons for operations cancellation. Of course, this is not consistent with the results of Rajenderkumar's study, which attributed a mere (3.1) percent of cancellation to non-attendance of patient on the day of surgery. The difference may be due to the type of hospital specialty investigated in the present study (ophthalmology) (9, 10). Providing proper explanations for by the nurses clarifies all the problems which may arise by operation cancellation to the patient.

According to the findings of studies conducted in Spain, Australia as well as in the hospitals affiliated with Tehran University of Medical Sciences (Tehran, Iran) (1, 4, 10), change in the patient's clinical status was one the important reasons of cancellations, In our study, this inevitable issue achieved the third rank among all reasons (7.9%). The fourth main reason for cancellation is unavailability of operation theater time (7%). This finding is consistent with studies conducted in Yazd, Tehran, China, Spain, Australia and India (1, 4, 7, 10-12). In all conducted studies, the above-mentioned reason is considered as one of the main reasons of cancellations. This occurs when the number of surgeries recorded in the operating room waiting list exceeds the potential capacity and may be caused due to the type of surgery, surgeon's skill and speed in operation. In cases of teaching hospitals, performing operations along with training assistants are among the important reasons leading to operation prolongation.

Duration of operations is not precisely predictable.

Unpredictable nature of certain operations or clinical problems faced by the surgical team during operation is another reason of operations prolongation. To avoid prolongation of operations, we can estimate the average duration of each operation to prevent time shortage for other operations waiting in line through careful scheduling for operations.

In the present study, patient's dissatisfaction was another contributor to operation cancellation with a relatively high frequency (5.8%). It must be noted that this factor had not been mentioned in other studies, which might be due to its merging with other similar factors such as patient's non-attendance. Providing complete information regarding the operation, its conditions and necessity, and notifying the patient of his/her absolute liberty to accept or reject the operation by the nursing team can reduce cancellation frequency.

Patient's unpreparedness and incomplete Nil Per Os (NPO) time are other important reasons for cancellations (5.5%).

This reason is not mentioned in other conducted studies. This difference may be due to the type of hospital specialty investigated in the present study. To prevent this problem, paying attention and reminding the patients will reduce operation cancellations to a great extent.

Besides the above-mentioned reasons, technical faults and equipment failure are considered as reasons for operation cancellations (4.6%).

This finding is consistent with the results of studies conducted in one of the teaching hospitals in Tehran, Iran (1). To prevent this problem, we can provide the list of required equipments for scheduled operations and look for any possible deficiency or shortage before hand (15).

Other cancellation reasons include delayed preparation of patient's lab tests (2.7%) and consultations responses (2.4%), non-attendance of surgeon (1.8%) and incomplete admission documents (0.6%). These problems can be prevented through coordinating the departments and Para-clinical units of the hospital, coordinating the hospital and surgeons, as well as providing a list of the required documents for the patients and have it checked. Since the files of many cases lacked complete information about the cancellation reasons, it is recommended to precisely record the information of canceled operations in a database and have it analyzed to improve operating room management and operation process precision of information recorded by operating room staff should be considered besides the use of these database, and data should be used as a care system to design, implement and monitor preset programs and to make modifications if needed (16).

Figure1 lists the reason of surgical cancellation in order of importance.

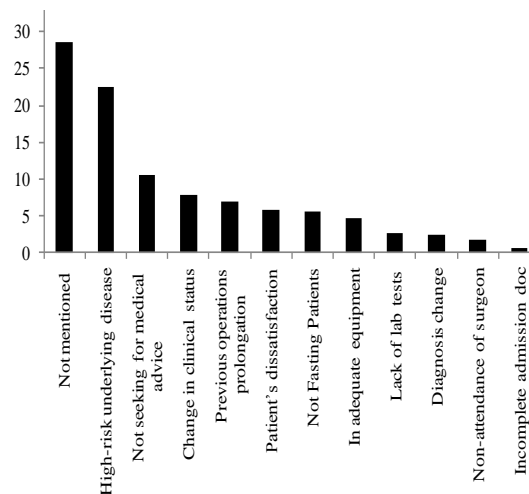


Figure1: The reason of surgical cancellation in order of importance.

Limitations of Study

The reasons for cancellations in 28 percent of the cases were not mentioned in the patient's file, which could have a significant impact on the results.

Conclusion

The results of the present study indicate that a high percentage of cancellation cases are preventable, and providing required equipments, reducing technical faults, maintaining and calibrating medical equipment's on time, improving the relationship between

Para-clinical units and operating room, improving the relationship between physician, patients and nurses, and precise recording of the cancellation reasons by operating room staff can reduce cancellation cases and increase the efficiency of hospital operating rooms.

Acknowledgment

The present study is the result of a research project approved by the Deputy of Research of Mashhad University of Medical Sciences, Mashhad, Iran (number 511/3577).

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