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RATES AND CAUSES OF OUTPATIENT SURGICAL CANCELLATIONS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Objective: to analyze the rate and causes of cancellations in an outpatient surgery unit at a university polyclinic that is part of the Unified Health System and located in the city of Rio de Janeiro.
Method: a cross-sectional study carried out in the outpatient surgical center of a university polyclinic in the city of Rio de Janeiro, Brazil. The data for the period August 2021 to July 2022 was extracted from the institution's database using a form containing the patients' sociodemographic and clinical variables, month, surgical specialty, causes and period of cancellation. The Wilcoxon-Mann-Whitney test was used for the age group variable, and Pearson's chi-square test was used for the month and specialty variables, with a significance level of 5%.
Results: of the 2,147 outpatient surgeries scheduled, 334 were canceled, with an annual surgical cancellation rate of 15.55%. There was a statistically significant difference in cancellations in December (p= 0.010), in the vascular surgery specialty (p= 0.001) and in older adults (p= 0.007). A total of ten causes of cancellation were found, the most frequent being patient absence (n=117; 35.03%), unfavorable clinical conditions (n=92; 27.54%) and non-compliance with preoperative preparation (n=30; 8.98%).
Conclusion: the surgical cancellation rate was high, mainly due to the patient's absence and clinical conditions on the day of surgery. It is hoped that the data will help to subsidize and raise awareness of the active participation of all professionals involved in outpatient surgery, in order to avoid cancellations.

DESCRIPTORS: Outpatient surgical procedures. Quality indicators in health care. Perioperative nursing. Pre-operative care. Surgical centers.

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TAXAS E CAUSAS DE CANCELAMENTO CIRÚRGICO AMBULATORIAL: ESTUDO TRANSVERSAL

RESUMO

Objetivo: analisar a taxa e as causas de cancelamento em unidade de cirurgia ambulatorial em uma policlínica universitária integrante do Sistema Único de Saúde e situada no município do Rio de Janeiro.
Método: estudo transversal, desenvolvido em centro cirúrgico ambulatorial de uma policlínica universitária da cidade do Rio de Janeiro, Brasil. Dados do período de agosto de 2021 a julho de 2022 foram extraídos do banco de dados da instituição via formulário contendo variáveis sociodemográficas e clínica dos pacientes, mês, especialidade cirúrgica, causas e período do cancelamento. Para variável faixa etária utilizou-se o teste de *Wilcoxon-Mann-Whitney*, e para variáveis mês e especialidade, o teste qui-quadrado de Pearson, adotado nível de significância de 5%.
Resultados: dentre as 2.147 cirurgias ambulatoriais agendadas, 334 foram canceladas, com taxa de cancelamento cirúrgico anual de 15,55%. Houve diferença estatística significativa nos cancelamentos ocorridos no mês de dezembro (p= 0,010), na especialidade cirúrgica vascular (p= 0,001) e em pacientes idosos (p= 0,007). Foram encontradas dez causas de cancelamento, sendo as mais frequentes relacionadas à falta do paciente (n=117; 35,03%), às condições clínicas desfavoráveis (n=92; 27,54%) e à inconformidade no preparo pré-operatório (n=30; 8,98%).
Conclusão: a taxa de cancelamento cirúrgico foi elevada, sobretudo pela falta e pelas condições clínicas do paciente no dia da cirurgia. Espera-se que os dados possam contribuir para subsidiar e sensibilizar a participação ativa de todos os profissionais envolvidos em cirurgia ambulatorial, de modo a evitar cancelamento.

DESCRITORES: Procedimentos cirúrgicos ambulatórios. Indicadores de qualidade em assistência à saúde. Enfermagem perioperatória. Cuidados pré-operatórios. Centros cirúrgicos.

TASAS Y CAUSAS DE CANCELACIÓN QUIRÚRGICA AMBULATORIA: ESTUDIO TRANSVERSAL

RESUMEN

Objetivo: analizar la tasa y causas de cancelación en un centro de cirugía ambulatoria de un policlínico universitario que forma parte del Sistema Único de Salud ubicado en la ciudad de Río de Janeiro.
Método: estudio transversal, desarrollado en un centro quirúrgico ambulatorio de un policlínico universitario de la ciudad de Río de Janeiro, Brasil. Los datos del período de agosto de 2021 a julio de 2022 se extrajeron de la base de datos de la institución mediante un formulario que contenía las variables sociodemográficas y clínicas de los pacientes, mes, especialidad quirúrgica, causas y período de cancelación. Para la variable grupo de edad se utilizó la prueba de Wilcoxon-Mann-Whitney, y para las variables mes y especialidad, la prueba chi-cuadrado de Pearson, adoptándose un nivel de significancia del 5%.
Resultados: de las 2.147 cirugías ambulatorias programadas, 334 fueron canceladas, con una tasa de cancelación quirúrgica anual del 15,55%. Hubo diferencia estadísticamente significativa en las cancelaciones ocurridas en diciembre (p= 0,010), en la especialidad de cirugía vascular (p= 0,001) y en pacientes de edad avanzada (p= 0,007). Se encontraron diez causas de cancelación, siendo las más frecuentes las relacionadas con ausencia del paciente (n=117; 35,03%), condiciones clínicas desfavorables (n=92; 27,54%) e incumplimiento en la preparación preoperatoria (n=30; 8,98). %).
Conclusión: la tasa de cancelación quirúrgica fue alta, principalmente por la ausencia del paciente y las condiciones clínicas el día de la cirugía. Se espera que los datos puedan contribuir al apoyo y concientizacion sobre la necesidad de participación activa de todos los profesionales implicados en la cirugía ambulatoria, para evitar cancelaciones.

DESCRIPTORES: Procedimientos quirúrgicos ambulatorios. Indicadores de calidad en la atención sanitaria. Enfermería perioperatoria. Cuidados pre-operatorios. Centros quirúrgicos.

INTRODUCTION

Among the quality indicators used in operating rooms is the cancellation rate, which is commonly used to evaluate the efficiency of services, patient safety and perioperative management[1].

The cancellation rate varies from 2 to 40% in developed countries, and can be as high as 73% in low- and middle-income countries, causing unnecessary damage to patients, families and healthcare organizations[2]. The literature indicates that a single case of surgical cancellation can result in a loss of around 4,802 dollars. When a cancellation rate of 1.4% is observed, the total loss can exceed 32 million dollars. However, around 50 to 65% of cancellations are potentially avoidable. Therefore, surgical services that manage to maintain low cancellation rates demonstrate greater efficiency[3-4].

The definition of surgical cancellation is broad and imprecise in the literature. Thus, in this study, surgical cancellation was defined as any scheduled operation that was not carried out on the planned day[3]. Although it is one of the main causes of underutilization of the operating room and a recurring issue in health services around the world[5], there has been a scarcity of publications on the causes of cancellations in outpatient surgery in the last five years[1].

It is also imperative to consider the negative repercussions for the patient resulting from the surgical cancellation. This decision implies not only the interruption of treatment for their health condition, but also the consequent loss of productivity and the addition of financial losses to the family budget. In addition, cancellation can induce states of anxiety and stress, both emotional and physical, compromising preoperative preparation and exacerbating the patient's clinical condition[1].

Although it is difficult to compare the reasons and financial losses between different health units, analyzing the cancellation/suspension rate of surgeries, their causes, consequences and possible interventions is crucial to improving the quality of care, as well as rationalizing financial and human resources, above all reducing inconvenience for the patient[5].

Nurses have several relevant roles in the perioperative context, including planning, supervision, responsibility for forecasting and providing human and material resources, as well as the equipment needed to meet the demands of the operating room[3]. However, it should be borne in mind that although the causes of surgical cancellations are multifactorial and multiprofessional, a failure in the nurse's managerial actions can cause delays in surgeries and even their cancellation. As such, it is imperative for these professionals to know the planning, management and organizational tools that will allow them to measure the performance and quality of their services[4].

There is a significant percentage of outpatient surgeries performed worldwide due to the many advantages described in the literature, such as reduced costs, fewer post-operative complications, shorter hospital stays, less likelihood of healthcare-associated infections and recovery in a familiar environment, with less socio-familial disruption[6]. The United States and the United Kingdom accounted for up to 60% and 50%, respectively, of all elective surgeries performed[7]. In Brazil, in 2019, the COVID-19 pre-pandemic period, more than 48 million surgeries were performed by the Unified Health System (Sistema Único da Saúde, SUS), of which 90% were outpatient surgeries[8].

Although the number of outpatient surgeries is significant, there are a limited number of studies that address the cancellation rate and causes in the context of outpatient surgery[1]. Thus, it is believed that this study is relevant for helping managers to reflect on the issue, determining possible weaknesses in the health unit, supporting evidence-based decision-making, implementing strategies for possible improvements that minimize the occurrence of these surgical cancellations, offering quality service and, consequently, reducing the surgical cancellation rate.

In view of the above, the following research problem was selected: What is the rate and causes of surgical cancellations in outpatient units? The general objective of the study was to analyze the rate and causes of cancellations in an outpatient surgery unit at a university polyclinic located in the city of Rio de Janeiro and part of the Unified Health System (SUS).

METHOD

This is a cross-sectional, documentary, descriptive and analytical study conducted using the STROBE®[9] checklist. The data collection site was an outpatient surgery unit at a university polyclinic that is part of the SUS and located in the city of Rio de Janeiro.

The unit of analysis was the surgery records scheduled between August 2021 and July 2022. This study did not use a sample calculation as the object of analysis was the record of surgeries performed and canceled over a 12-month period.

The inclusion criteria were records of scheduled outpatient surgeries for patients of all ages and both genders. The exclusion criteria were registrations for the dermatology and orthopedics specialties, as they started their activities in July 2022.

The data collection instrument was constructed based on the literature review[1], containing the following variables: patient sociodemographic and clinical data; cancellation month; surgery data; surgical specialty; cancellation causes and perioperative period. In this study, the perioperative cancellation period was divided into two: preoperative, which took place the day before surgery; and transoperative, which took place on the day of surgery.

The categorical variables inherent to the patients' sociodemographic and clinical profiles were: gender, education, marital status, American Society of Anesthesiologists (ASA) classification, comorbidity and the numerical variable age. The specific surgical variables included the surgical specialty, the cancellation cause and the perioperative period.

The surgical cancellation rate quality indicator was measured as the number of canceled procedures divided by the total number of surgeries scheduled over a period of time, multiplied by one hundred[1]. An analysis was made of the statistical difference between the records for month, specialty and age group of surgeries performed and canceled. Based on the non-parametric nature of the age group variable, the Wilcoxon-Mann-Whitney test was used to analyze it. To test for possible associations, the categorical variables month and specialty were evaluated using Pearson's chi-square test, with a significance level of 5%.

As for the cancellation categories, they were categorized into patient, clinical and institutional causes, according to the findings of scientific evidence[10]. The patient's causes were related to factors caused by the patient, such as: patient absence on the day of the scheduled procedure; non-compliance with preoperative preparation, which refers to non-compliance with preoperative guidelines, such as the absence of fasting, the wearing of ornaments, the lack of a companion, the use of anticoagulants, the delay in arriving at the unit and forgetting to bring preoperative tests; patient with incomplete doses or no COVID-19 vaccine; patient dropout; and absence of the RT-PCR test for COVID-19.

Clinical causes refer to any clinical conditions that are unfavorable to performing the outpatient surgical procedure safely, such as heart disease, flu-like symptoms, a positive RT-PCR test for COVID-19 and decompensation of comorbidities such as diabetes mellitus and hypertension. Finally, the institutional causes are related to the organizational aspects that led to the cancellation, such as: lack of a professional; lack of equipment, supplies or a bed in a supporting university hospital; scheduling errors; and lack of a preoperative examination.

Data collection began with the extraction of information from the database received from the institution in August 2022. The data was obtained from documentary analysis of the institution's internal records. For organization, the data collected was entered manually by the main researcher into an electronic spreadsheet (Microsoft Excel®), checked by the same researcher at different times and then analyzed in the R statistical package, version 4.2.1.

It should be emphasized that the ethical and legal principles were respected and the study was conducted with data collection in accordance with the guidelines for research involving human beings described in the Resolutions of the National Health Council (CNS) No. 466/2012 and 510/2016 and after approval by the Research Ethics Committee (Comitê de Ética em Pesquisa, CEP).

RESULTS

Surgical scheduling and cancellation records from the outpatient surgery unit from August 2021 to July 2022 were analyzed. The total number of outpatient surgical procedures scheduled was 2,147, of which 334 were canceled.

In relation to age, the minimum was 13 and the maximum was 94, giving a mean age of 51.01 (SD±16.36) and a median of 51.5. As for the social and demographic characteristics of the patients who had their surgeries canceled, the majority were male (n=216; 64.67%), single (n=158; 47.73%) and had completed high school (n=114; 34.13%). In relation to the clinical profile of the patients, this study found that the majority of patients were ASA I (n=158; 47.31%). However, of the patients who had some kind of comorbidity, systemic arterial hypertension (SAH) was the most common (n=156; 48.6%). The sociodemographic and clinical profile of the cancelations is shown in Table 1.

Table 1 – Sociodemographic and clinical profile of patients with canceled outpatient surgeries. Rio de Janeiro, RJ, Brazil, 2022. (n=334).

Categories	Variables	n	%
Gender	Male	216	64.67
	Female	118	35.33
Marital status	Single	158	47.73
	Married	131	39.58
	Widowed	19	5.74
	Divorced	17	5.14
	Stable union	6	1.81
	Not reported	3	0.90
Education	Complete High School	114	34.13
	Incomplete Elementary School	107	32.04
	Complete Elementary School	65	19.46
	Incomplete High School	17	5.09
	Complete Higher Education	16	4.79
	Not reported	6	1.80
	Incomplete Higher Education	5	1.50
	Illiterate	4	1.20
*ASA	I	158	47.31
	II	93	27.84
	III	70	20.96
	Not reported	13	3.89

Table 1 – Cont.

Categories	Variables	n	%
Comorbidities	SAH†	156	48.60
	CKD‡	64	19.94
	DM§	61	19.00
	Another disease	19	5.92
	Not reported	13	3.89
	Heart disease	7	2.18
	Dyslipidemia	5	1.56

*ASA: American Society of Anesthesiologists; †SAH: Systemic Arterial Hypertension; ‡ CKD: Chronic Kidney Disease; §DM: Diabetes Mellitus.

Although the number of scheduled surgeries was higher in May and July 2022, with 238 and 227 respectively, the monthly analysis showed that the highest cancellation rate was in December 2021 (n=27; 22.50%) and the lowest in August 2021 (n=19; 9.74%). The annual surgical cancellation rate was 15.55%.

Among the surgical specialties, vascular surgery had the highest cancellation number (n=66; 20.89%). The lowest cancellation rate, on the other hand, was for periorbital surgery (n=6; 10.17%). In relation to age, the highest percentage of cancellations was recorded in the group of older adults ≥60 years (n=112; 17.36%).

There was a statistically significant difference between the variables surgical cancellations in the month of December (p=0.010), in the specialty of vascular surgery (p= 0.001) and in relation to the age group for older adults (p=0.007), as shown in Table 2.

Table 2 – Distribution of the cancellation rate and association of surgical cancellation with month, gender, surgical specialty and age group. Rio de Janeiro, RJ, Brazil, 2022. (n=334).

		Scheduled	Canceled		p-value
Categories	**Variables**	**n**	**n**	**%**	
Month	Aug/21	195	19	9.74	
	Sept/21	191	32	16.75	
	Oct/21	177	25	14.12	
	Nov/21	175	23	13.14	
	Dec/21	120	27	22.50	0. 010*
	Jan/22	60	11	18.33	
	Feb/22	182	30	16.48	
	Mar/22	194	40	20.62	
	Apr/22	183	38	20.77	
	May/22	238	40	16.81	
	Jun/22	205	25	12.20	
	Jul/22	227	24	10.57	

Table 2 – Cont.

		Scheduled	Canceled		p-value
Specialty	Vascular	316	66	20.89	0.001*
	Plastic	285	57	20.00	
	General	296	51	17.23	
	Proctology	217	31	14.29	
	Urology	974	123	12.63	
	Periorbital	59	6	10.17	
Age group in years†	Older Adults (≥ 60)	533	112	17.36	0.007‡
	Adults (≥ 19 a ≤ 59)	1,244	218	14.91	
	Adolescents (>12 a ≤18)	31	4	11.43	
	Children (≤ 12)	5	0	0	

*p-value obtained by Pearson's chi-square test; †Age group was categorized based on the Statute of the Child and Adolescent, and the Older Adult; ‡p-value obtained by the Wilcoxon-Mann-Whitney test. The significance level was 5%.

Among the categories listed, patient-related causes were most often related to the patient's absence on the day of the scheduled procedure (n=117; 35.03%). Table 3 details the period in which the surgical cancellation occurred, with a predominance in the transoperative period, i.e. on the day of the procedure (n=308; 92.22%).

Table 3 – Characterization of the causes and perioperative period in which cancellations occurred in a university outpatient surgery unit belonging to the SUS. Rio de Janeiro, RJ, Brazil, 2022. (n.334).

Categories	Variables	n	%
Patient	Patient absence	117	35.03
	Non-compliance with preoperative preparation	30	8.98
	Patient without COVID-19 vaccine/ incomplete doses	20	5.99
	Patient dropout	10	2.99
	No RT-PCR test for COVID-19	7	2.10
Clinical	Unfavorable clinical conditions	92	27.54
Institutional	Lack of professionals	18	5.39
	Scheduling error	15	4.49
	Lack of pre-operative examination	13	3.90
	Lack of equipment/supplies/beds	12	3.59
Perioperative period	Transoperative	308	92.22
	Pre-operative	26	7.78

DISCUSSION

The cancellation rates presented in the literature vary according to the different types of unit, hospital or outpatient, and management, public or private. However, academic institutions have reported higher rates than non-academic hospitals and SUS units (14%) when compared to surgeries by health insurance companies (8.8%) or private individuals (5.4%)[11,12]. The cancellation rate of outpatient surgeries in this study is high, similar to a Brazilian study that identified and characterized the most used quality indicators in a public hospital operating room, with a cancellation rate of 17.6%[13], and although there is no consensus on acceptable values, it is speculated that rates below 5% indicate greater service efficiency[1,14].

In order to evaluate their services and guarantee patient safety in the operating room, healthcare institutions use quality indicators. The main objective of managing the cancellation rate indicator is to reduce it through preventive measures[13], and it is essential to involve senior management in implementing improvements and making the necessary resources available[15].

The high cancellation rate seen in December is possibly related to the fact that patients and their families are preparing for the end-of-year celebrations, although no scientific evidence with similar data has been observed. A previous study reported a higher cancellation rate during the winter, but no statistically significant difference with surgical cancellations[14]. Scheduling the surgery with the participation of the patient and family can be a viable strategy to reduce cancellations in December[3].

In order to make more timely and assertive decisions, it is important to assess the surgical specialties with the highest cancellation rates. This study found that vascular surgery had the highest cancellation rate, in contrast to a previous study, which considered cancellation to be an infrequent event for this specialty, due to the multidisciplinary preoperative care model used at the institution[16]. In relation to age, this study is similar to a study in which older patients had a higher cancellation rate[17], unlike a reference hospital for outpatient surgeries in the south of Maranhão-Brazil[18], in which the age group between 21 and 30 was the most canceled. This finding deserves attention, since surgical cancellation can cause more suffering, stress and anxiety in older patients than in younger patients[11].

In this sense, knowing and assessing the patient's profile prior to the surgical procedure enables individualized nursing care. Preoperative assessment of older adults is crucial, given the higher prevalence of comorbidities and limitations in this population, taking into account social, psychological and physical vulnerabilities. Thus, a multi-professional preoperative assessment protocol, with careful patient selection and a structured checklist, combined with family involvement to ensure the success of the outpatient surgical process, could be an effective improvement strategy[11,18,19].

Patient absenteeism on the day of a scheduled procedure is a significant challenge faced by healthcare institutions, whether public or private, requiring investment in absence control programs[13,17]. Several factors can contribute to this problem, including inadequate preoperative preparation, financial difficulties, scheduling problems and poor communication between the patient and the health service[20].

Effective communication is fundamental to guaranteeing patient safety and quality of care[21]. Strategies such as telephone confirmation of the patient's presence before surgery have been shown to significantly reduce cancellation rates due to absence. It is therefore essential that healthcare institutions invest in improving communication and implementing technologies to minimize avoidable surgical cancellations, increasing service quality and patient safety[22,23].

In relation to unfavorable clinical conditions, there is evidence that it is common for outpatient surgeries to be canceled for this reason[3,10,17]. It is known, however, that stable chronic diseases,

such as diabetes mellitus, asthma or systemic arterial hypertension, are not contraindications, but must be carefully managed pre- and post-operatively, so that there is no surgical cancellation. It is essential to emphasize that patients with an ASA III classification can benefit from outpatient surgery, provided there is an adequate assessment of the balance between risk and benefit of the procedure, as well as clinical stability over the last three months[24]. The use of preoperative assessment clinics by nurses and/or anesthesiologists for patients with multiple comorbidities has shown a reduction in cancellations and unnecessary costs, minimizing the risk of adverse events in outpatient surgery[25,26].

Patients undergoing outpatient surgery have the preoperative preparation carried out at home and, when done properly, this can significantly reduce the cancellation rate, raising the patient's satisfaction level. However, when performed improperly, it affects the quality of the surgical procedure and the management of hospital resources[24]. These failures can result from preoperative instructions not being passed on, or not even reinforced to the patient, both of which are the result of ineffective communication[22,27]. However, the use of educational technology tools can complement health instruction, strengthening verbal information from professionals, promoting patient autonomy, facilitating access to low-cost printed materials, easy handling and transmission of information without the direct need for a health professional[27,28].

In this context, one institution achieved a 50% reduction in cancellation rates after nurses actively participated in the "Nurse-Patient Preoperative Call Log" implementation project, in which the nurse made two preoperative calls to each patient or family member at two different times, to allow time to process the information and formulate questions for the second call[6].

This scientific study indicated a high annual cancellation rate compared to the existing literature. It is recommended that further studies be carried out to maintain and monitor the cancellation rate by implementing appropriate improvement strategies at the unit. By identifying the rate and causes of cancellation, it makes relevant contributions to clinical practice, nursing and science, making it possible to provide support for the development of institutional guidelines and protocols, as well as boosting scientific research in the field of nursing and the quality of healthcare. These contributions have the potential to improve the quality of care offered to patients and optimize the efficiency of clinical processes.

However, it is important to recognize that the study has limitations. Its restriction to a single outpatient surgery unit linked to a public university may limit the generalizability of the results to other units or different health contexts. Furthermore, as this is an observational study, there are no interventions or direct control by the researcher over the variables studied, which also imposes limitations on the ability to establish definitive causal relationships between the variables analyzed. Thus, there is a need for additional studies, such as randomized clinical trials, to investigate causality, replicated in other units, contexts and populations, in order to obtain more comprehensive and applicable conclusions.

CONCLUSION

In conclusion, the study achieved its aim, showing the rate and causes of cancellations in outpatient surgery units at a university polyclinic that is part of the Unified Health System. It was found that the cancellation rate for outpatient surgery was high. The main causes were the patient's absence and clinical conditions on the day of surgery. Finally, the significant differences were for the month of December, the vascular surgery specialty and older adults.

It is hoped that the data from this study will help to subsidize and raise awareness of the active participation of all the professionals involved in outpatient surgery, with the formulation and implementation of strategies to improve care processes, involving everything from the patient to senior management, in order to mitigate the rate and causes of cancellations, leading to positive results for the health system.

REFERENCES

1. Pinheiro LDPS, Fassarella CS, Camerini FG, Henrique DDM, Ribeiro OMPL, Romero LB. Cancellation of outpatient surgery: An integrative review. Rev Enferm UERJ [Internet]. 2022 [cited 2022 May 07];30(1):66477. Available from: https://doi.org/10.12957/reuerj.2022.66477
2. Abate SM, Chekole YA, Minaye SY, Basu B. Global prevalence and reasons for case cancellation on the intended day of surgery: A systematic review and meta-analysis. Int J Surg Open [Internet]. 2020 [cited 2022 Jun 02];26:55-63. Available from: https://doi.org/10.1016/j.ijso.2020.08.006
3. Turunen E, Miettinen M, Setälä L, Vehviläinen-Julkunen K. Elective Surgery Cancellations During the Time Between Scheduling and Operation. J Peri Anesthesia Nurs [Internet]. 2018 [cited 2021 Nov 28];34(1):97-107. Available from: https://doi.org/10.1016/j.jopan.2017.09.014
4. Antoniou V, Burke O, Fernandes R. Introducing a reserve waiting list initiative for elective general surgery at a District General Hospital. BMJ Open Qual [Internet]. 2019 [cited 2021 Nov 28];8(3):e000745. Available from: https://doi.org/10.1136/bmjoq-2019-000745
5. Araújo PFCS, Nascimento JS, Azedo SPBM, Xavier SM, Costa IKF, Araújo SMMG. Cancellations of elective surgeries in a teaching hospital: Causes and statistics. Enferm Glob [Internet]. 2020 [cited 2022 Jun 15];19(3):286-321. Available from: https://doi.org/10.6018/eglobal.396911
6. Lee JH. Anesthesia for ambulatory surgery. Korean J Anesthesiol [Internet]. 2017 [cited 2022 Jun 16];70(4):398-406. Available from: https://doi.org/10.4097/kjae.2017.70.4.398
7. Malizu EV, Lasebikan OA, Omoke NI. Orthopedic day-case surgery in nigeria: A single-center experience. Annals of African Surgery [Internet]. 2021 [cited 2022 Nov 28];18:52-8. Available from: https://doi.org/10.4314/aas.v18i1.10
8. Brasil. Ministério da Saúde. Produção ambulatorial do SUS por local de atendimento. Brasília: Departamento de Informática do Sistema Único de Saúde (DATASUS) [Internet]. 2019 [cited 2022 Jan 28]. Available from: http://tabnet.datasus.gov.br
9. Von Elm E, Altman DG, Egger M, Pocock SJ, Gotzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: Guidelines for reporting observational studies. BMJ [Internet]. 2007 [cited 2022 Jan 22];335:806-8. Available from: https://doi.org/10.1136/bmj.39335.541782.AD
10. Smith BB, Smith MM, Hyder JA, Mauermann WJ, Warner ME, Licatino LK, et al. Same-day cancellation in ambulatory surgery a retrospective review at a Large Academic Tertiary Referral Center. J Ambul Care Manage [Internet]. 2018 [cited 2022 Jan 22];41(2):118-27. Available from: https://doi.org/10.1097/JAC.0000000000000226
11. Turunen E, Miettinen M, Setälä L, Vehviläinen-Julkunen K. The impact of a structured preoperative protocol on day of surgery cancellations. J Clin Nurs [Internet]. 2017 [cited 2021 Nov 25];27(1-2):288-305. Available from: https://doi.org/10.1111/jocn.13896
12. Rangel ST, Silva JLS, Silva RCL, Lima ACB, Campos BA, Pereira EBF. Occurrence and reasons for the suspension of elective surgery in a referral hospital. Rev Enferm Digit Cuid Promoção Saúde [Internet]. 2019 [cited 2021 Dec 28];4(2):119-23. Available from: https://doi.org/10.5935/2446-5682.20190019

13. Amaral JAB, Aparecida, Spiri WC, Assis MA, Guimarães HCQCP, Lima SAM. Quality indicators at a surgical center specialized in dermatology. Cogitare Enferm [Internet]. 2020 [cited 2021 Dec 28];5:1. Available from: https://doi.org/10.5380/ce.v25i0.70391

14. Da'Ar OB, Al-Mutairi T. How do patient demographics, time-related variables, reasons for cancellation, and clinical procedures affect frequency of same-day operating room surgery cancelation? A maximum likelihood method. BMC Health Serv Res [Internet]. 2018 [cited 2021 Dec 28];18(1):1-9. Available from: https://doi.org/10.1186/s12913-018-3247-y%0A

15. Associação Brasileira de Enfermeiros de Centro Cirúrgico. Recuperação Anestésica e Centro de Material e Esterilização. Diretrizes de práticas em enfermagem cirúrgica e processamento de produtos para a saúde. 8th ed. São Paulo, SP(BR): SOBECC; 2021.

16. Matzek LJ, Smith BB, Mauermann WJ, Bower TC, Smith MM. Same-Day Cancellation in Vascular Surgery: 10-Year Review at a Large Tertiary Care Center. Ann Vasc Surg [Internet]. 2020 [cited 2022 Jul 28];62:349-55. Available from: https://doi.org/10.1016/j.avsg.2019.06.036

17. Liu X-J, Liang Y, Yan H. Effect of preoperative telephone interview in the cancellation rate of daytime surgery in eye hospitals. Int Eye Sci [Internet]. 2022 [cited 2023 Jan 28];22(1):163-6. Available from: https://doi.org/10.3980/j.issn.1672-5123.2022.1.36

18. Lima FA Jr, Vieira ER, Lima KVM, Borges RM, Lima DS, Cruz ACAA, et al. Cancellation of ambulatory surgical procedures: Descriptive Analysis in a Referral Hospital between 2016/2018. REAS [Internet]. 2019 [cited 2022 Nov 28];11(16):e1449. Available from: https://doi.org/10.25248/reas.e1449.2019

19. Stephanie C, Mathieu A, Aurore M, Monique MR-T. Outpatients' perception of their preoperative information regarding their health literacy skills and their preoperative anxiety level. Medicine [Internet]. 2021 [cited 2023 Jan 28];100:e26018. Available from: https://doi.org/10.1097/MD.0000000000026018

20. Talalwah NA, Mciltrot KH. Cancellation of Surgeries: Integrative Review. J Perianesth Nurs [Internet]. 2019 [cited 2024 Jan 15];34(1):86-96. Available from: https://doi.org/10.1016/j.jopan.2017.09.012

21. Pimenta CJL, Viana LRC, Bezerra TA, Silva CRR, Costa TF, Costa KNFM. Pleasure, suffering and interpersonal communication in the work of nurses in the hospital setting. Texto Context Enferm [Internet]. 2020 [cited 2022 Jan 20];29:e20190039. Available from: https://doi.org/10.1590/1980-265X-TCE-2019-0039

22. Solak A, Pandza H, Beciragic E, Husic A, Tursunovic I, Djozic H. Elective Case Cancellation on the Day of Surgery at a General Hospital in Sarajevo: Causes and Possible Solutions. Mater Sociomed [Internet]. 2019 [cited 2024 Jan 15];31(1):49. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6511384/

23. Almeida JCCA, Oliveira AA. Information and communication technology tools in the surgical patient's journey: Integrative review. Res Soc Dev [Internet]. 2022 [cited 2023 Nov 20];11(14):e212111436222. Available from: https://doi.org/10.33448/rsd-v11i14.36222

24. Herrera-Usagre M, Santana V, Burgos-Pol R, Oliva JP, Sabater E, Rita-Acosta M, et al. Effect of a Mobile App on Preoperative Patient Preparation for Major Ambulatory Surgery: Protocol for a Randomized Controlled Trial. JMIR Res Protoc [Internet]. 2019 [cited 2023 Nov 20];8:e10938. Available from: http://www.researchprotocols.org/2019/1/e10938/

25. Liu S, Lu X, Jiang M, Li W, Li A, Fang F, et al. Preoperative assessment clinics and case cancellations: A prospective study from a large medical center in China. Ann Transl Med [Internet]. 2021 [cited 2023 Dec 20];9(19). Available from https://doi.org/10.21037/atm-21-4665

26. Ferreira J, Boto P. Cancellations of Elective Surgeries on the Day of the Operation in a Portuguese Hospital: One Year Overview. Acta Med Port [Internet]. 2021 [cited 2023 Dec 20];34:103. Available from: https://doi.org/10.20344/amp.13437

27. Luna AA, Panicé ATOM, Silva NCM, Souza PA. Construction and validation of educational material with preoperative guidelines for adult and elderly patients. Glob Clin Res J [Internet]. 2022 [cited 2023 Dec 20];3(2):49-58. Available from: https://doi.org/10.5935/2675-5602.20200251

28. Araújo NM , Oliveira ES, Silva BVS, Melo EBB, Dantas RAN, Dantas DV. Audiovisual aids in preoperative cardiac surgery education: A scoping review. Texto Contexto Enferm [Internet]. 2022 [cited 2024 Jan 15];31:e20210334. Available from: https://doi.org/10.1590/1980-265X-TCE-2021-0334

NOTES

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CONFLICT OF INTEREST

There is no conflict of interest.

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