

 Rafaela Batista Coutinho¹
 Priscilla Alves Barreto¹
 Thiago Huaytalla Silva¹

¹ Universidade Federal do Rio de Janeiro , Instituto de Nutrição Josué de Castro, Departamento de Nutrição e Dietética. Rio de Janeiro, RJ, Brasil.

Correspondence
Rafaela Batista Coutinho
rafaelabcoutinho@gmail.com

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 Renata Brum Martucci

Evaluation of dietitian's knowledge about fasting abbreviation protocols and the actual preoperative fasting time practiced

Avaliação do conhecimento de nutricionistas sobre os protocolos de abreviação de jejum e o tempo real de jejum pré-operatório praticado

Abstract

Objective: To assess the knowledge of dietitians regarding fasting abbreviation and the preoperative fasting time practiced in hospitals in the state of Rio de Janeiro, Brazil. **Methods:** This is a cross-sectional, descriptive study involving clinical dietitians who work in hospitals in the state of Rio de Janeiro. Data were collected through the application of an online structured questionnaire and analyzed through descriptive statistics and the Chi-Square test to verify associations at a significance level of 5%. **Results:** Out of the 84 participating dietitians, 85% had heard about fasting abbreviation and supplements for this purpose, but 31.33% did not correctly describe current recommendations. In 48.81% of hospitals, the actual preoperative fasting time exceeds 12 hours, and 51.81% do not have a fasting abbreviation protocol. According to dietitians, fasting abbreviation is a practice that reduces surgical stress (91.57%), recommended for all types of surgeries, regardless of size (65.43%). The resistance of professionals to adopting new practices was identified as the main challenge to implementing the fasting abbreviation protocol (78.79%). There was no association between the overall knowledge level of professionals, the length of education, and specialization ($p > 0.05$). **Conclusion:** The high level of knowledge among dietitians about fasting abbreviation contrasts with the maintenance of traditional preoperative fasting techniques. The absence of institutional protocols and ineffective communication among teams strongly contribute to the non-incorporation of new practices into perioperative routines.

Keywords: Fasting. Preoperative Care. Knowledge. Dietitians. Enhanced

Resumo

Objetivo: Verificar o conhecimento de nutricionistas sobre abreviação de jejum e o tempo de jejum pré-operatório praticado em hospitais do estado do Rio de Janeiro. **Métodos:** Trata-se de um estudo transversal, descritivo, envolvendo nutricionistas clínicos que atuam em hospitais do estado do Rio de Janeiro. Os dados foram coletados através da aplicação de um questionário estruturado *on-line* e analisados por meio de estatística

descritiva e do teste de Qui-Quadrado para verificação das associações com o nível de significância de 5%. **Resultados:** Dos 84 nutricionistas participantes, 85% já ouviram falar sobre abreviação de jejum e suplementos para esta finalidade, porém 31,33% não descreveram corretamente as recomendações atuais. Em 48,1% dos hospitais o tempo real de jejum pré-operatório é superior a 12 horas e 51,81% não possuem protocolo de abreviação de jejum. Na opinião dos nutricionistas, a abreviação de jejum é uma prática que reduz o estresse cirúrgico (91,57%), indicada para todos os tipos de cirurgias, independentemente do porte (65,43%). A resistência dos profissionais na adesão de novas condutas foi apontada como o principal desafio para implementação do protocolo de abreviação de jejum (78,8%). Não houve associação entre o grau de conhecimento geral dos profissionais, o tempo de formação e a especialização ($p > 0.05$). **Conclusão:** O bom nível de conhecimento dos nutricionistas sobre abreviação de jejum contrasta com a manutenção de técnicas tradicionais de jejum pré-operatório. A ausência de protocolos institucionais e a comunicação ineficiente entre as equipes contribuem fortemente para não incorporação de novas condutas à rotina perioperatória.

Palavras-chave: Jejum. Cuidados Pré-operatórios. Conhecimento. Nutricionistas. Melhor Recuperação Pós-Operatória.

INTRODUCTION

Food intake interruption from midnight before any elective surgery was recommended by Mendelson in the 1940s with the aim of reducing the risk of gastrointestinal regurgitation, raising pH, and reducing gastric residual volume.^{1,2} The abbreviation of preoperative fasting time as a means to enhance patient satisfaction, decrease the occurrence of adverse events, minimize postoperative discomfort, and optimize hospital expenditures/resources emerged in the late 1990s as a suggestion from the American Society of Anesthesiologists (ASA) and it was subsequently incorporated into multimodal perioperative care protocols such as ERAS (Enhanced Recovery After Surgery) and ACERTO (*Aceleração da Recuperação Total Pós-Operatória*).³⁻⁷

Prolonged fasting promotes a continuous or exacerbated response to trauma, potentiating undesirable clinical and metabolic events that impair postoperative recovery, such as insulin resistance and difficulty in healing. Additionally, it is associated with increased symptoms that cause dissatisfaction and discomfort in patients, including thirst, hunger, anxiety, malaise, nausea, and vomiting.^{8,9}

Paradigm shifts in perioperative care promoted by multimodal protocols are based on evidence-based and multidisciplinary interventions. The lack of cooperation and communication among team members represents one of the main barriers to the successful implementation of these protocols.¹⁰ Although anesthesiologists have more knowledge on this subject than other professionals, it is not translated into a reduction in preoperative fasting time, as most of them still adhere to the traditional "nil per oral from midnight", indicating that professional sensitization on correct practice compliance is as important as disseminating scientific information.^{11,12}

In the hospital setting, it is responsibility of the clinical dietitian to provide nutritional and dietetic assistance to patients, within its mandatory tasks the establishment and execution of technical service protocols, formulation of nutritional diagnoses, and elaboration of dietary prescriptions.¹³ The dietitian must be part of the multidisciplinary health team, and their presence ensures the implementation of all actions related to nutritional assistance, as well as the assistance in the compliance of all established protocols in the hospital unit.¹⁴

Hitherto, no records of studies investigating the knowledge and perception of the clinical dietitian concerning preoperative fasting abbreviation protocols have been found. This study aims to verify the knowledge of nutritionists about preoperative fasting abbreviation protocols and the actual preoperative fasting time practiced in hospitals in the state of Rio de Janeiro, as well as to evaluate adherence and identify possible difficulties in the execution of fasting abbreviation protocols.

MATERIAL AND METHODS

Study Design

This is a cross-sectional and quantitative study with the application of a questionnaire specifically designed to measure the level of knowledge of dietitians concerning preoperative fasting and the fasting time practiced in hospital units in the state of Rio de Janeiro.

Study Population

Dietitians working in the state of Rio de Janeiro, in a hospital setting, public, private, or philanthropic, were the target population for this research. It included professionals of both genders, working in hospital units in the state of Rio de Janeiro, who agreed to participate in the research by signing the Free and Informed Consent Form. Those professionals who did not correctly fill out the data collection questionnaire were excluded from the study.

Data Collection

Data collection was carried out from February to March 2023 through the application of a structured individual questionnaire elaborated using the Google Forms® tool. The questionnaire consisted of 24 questions aiming the identification of the professionals' level of education, time and location of practice, hospital characteristics, the existence and application of the fasting abbreviation protocol in the unit, and the knowledge of dietitians concerning the topic. To minimize selection bias, the contact with professionals was made via social media, email, and messaging apps through individual participation invitation, including the survey access link. No lists were used to avoid guests identification or any access of their contact details by third parties. The questionnaire application and consent collection were done through electronic media with the completion of an online form.

Ethical Considerations

The research was planned in compliance with the ethical aspects provided in Resolution n. 466 of 2012¹⁵ and approved by the Ethics and Research Committee of the University Hospital Clementino Fraga Filho-HUCFF/UFRJ. Participation was voluntary and participants accepted the free and informed consent form provided in electronic format. The collected data were kept confidential and accessed only by the researchers.

Statistical Analysis

Data were tabulated in Microsoft Excel 2019®. In the descriptive analysis, categorical variables were presented with absolute (n) and relative (%) frequency, parametric data were expressed as mean and standard deviation, and non-parametric data as median and interquartile range. Comparisons between categorical variables were verified by the Chi-square test. The criterion for determining statistical significance adopted was of 5%. The power of post hoc sample was calculated using an online calculator (<https://clincalc.com/stats/Power.aspx>), considering two independent groups with dichotomous results and an alpha error of 0.05. The sample power was 97.5% for small/medium-sized hospitals regarding the existence of the fasting abbreviation protocol and 95.1% for specialization in Clinical Nutrition regarding knowledge of the guidelines.

RESULTS

The questionnaire was answered by 84 clinical dietitians working in a hospital unit, 96.43% female and 3.57% male, ranging from 23 to 61 (38.66±9.69) years old, mostly residing in the capital of the state (58.33%). The median time since graduation was 12.5 (IQ 5-19.5) years, with 42.86% of the participants having completed their undergraduate degree at least for 10 years. Seventy-seven participants had a specialization course, and the most mentioned one was on Clinical Nutrition (50.65%). Working experience in the hospital context varied from a period of 6 months up to 36 years, with a median of 9 (IQ 4-19) years. Regarding the type, size, and location of hospitals, large-sized institutions (71.43%) from the public sector (64.29%) located in the state capital (71.43%) stood out. Concerning the types of surgeries performed, non-oncologic non-aesthetic gastrointestinal surgeries (84.52%), orthopedic surgeries (82.14%), and oncologic surgeries (79.76%) were the most mentioned ones (Table 1).

Table 1. Sociodemographic and work characteristics of dietitians and hospital units in the state of Rio de Janeiro (n=84). Rio de Janeiro-RJ, 2023.

AGE (in years)	
Mean ± standard deviation	38.66 ±9.69
SEX	
Female	81 (96.43%)
Male	3 (83.57%)
TIME OF GRADUATION	
<5 years	18 (21.43%)
5-10 years	18 (21.43%)
11-15 years	14 (16.67%)
16-20 years	13 (15.48%)
21-25 years	10 (11.90%)
26-30 years	5 (5.95%)
>30 years	6 (7.14%)
Median (IQ)	12.5 (5-19.5)
TIME OF ACTION IN THE HOSPITAL AREA	
<5 years	28 (33.33%)
5-10 years	21 (25.00%)
11-15 years	6 (7.14%)
16-20 years	10 (11.90%)
21-25 years	13 (15.48%)
26-30 years	1 (1.19%)
>30 years	5 (5.95%)
Median (IQ)	9 (4-19)
TYPE OF HOSPITAL	
Philanthropic	1 (1.19%)
Military	3 (3.57%)
Private	22 (26.19%)
Public	54 (64.29%)
Public/Private	4 (4.76%)
HOSPITAL SIZE	
Small (less than 50 beds)	2 (2.38%)
Medium (50-149 beds)	22 (26.19%)
Large (150 beds or more)	60 (71.43%)
TYPES OF SURGERIES PERFORMED*	
Cardiac	52 (61.90%)
GI Non-oncological Non-Aesthetic	71 (84.52%)
Gynecological Non-oncological	55 (65.48%)
Neurological	59 (70.24%)
Oncologic	67 (79.76%)
Orthopedic	69 (82.14%)
Pediatric	44 (52.38%)
Plastic	57 (67.86%)
Thoracic	58 (69.05%)
Transplant	2 (2.38%)
Urological	64 (76.19%)
Vascular	65 (77.38%)

*More than one response options were allowed in the question. IQ: interquartile range

Seventy-two participants had already heard about fasting abbreviation (85.71%), and, also about supplementation for this purpose (86.75%). Less than 70% correctly answered the current recommendations for preoperative fasting according to clinical guidelines on the subject. According to 13.25% of participants, fasting time should be determined by the attending physician in compliance with the complexity of the procedure. The percentage of correct answers was higher among professionals with clinical nutrition specialization (76.47%) and with a graduation time (75,828%) and experience in

the hospital setting (82.14%) over 15 years; however, there was no statistically significant association between the variables. Fifty-three dietitians (65.43%) considered that fasting abbreviation should be indicated for all types of surgery, regardless of the surgical complexity. Delayed gastric emptying, emergency surgeries, and sub-ileus/intestinal obstruction were cited as reasons for contraindicating this practice by 64.63%, 56.10%, and 47.56% of participants, respectively (Table 2).

Table 2. General knowledge of dietitians in the state of Rio de Janeiro about current recommendations for preoperative fasting. Rio de Janeiro-RJ, 2023.

CURRENT RECOMMENDATIONS ON FASTING ABBREVIATION RECOMMEND	
8h general diet, 6h light and/or enteral nutrition and 2h liquids without residue	57 (68.67%)
Fasting determined by the attending physician according to the size of surgery	11 (13.25%)
12h general diet, 6h light diet and 2h liquids without residue	8 (9.64%)
Absolute fasting of 8h	7 (8.43%)
THE ABBREVIATION FOR PRE-OPERATIVE FASTING IS INDICATED*	
For all types of surgeries, regardless of surgical size	53 (65.43%)
For medium and large surgeries, being dispensable in minor surgeries	16 (19.75%)
Only for patients at nutritional risk or malnourished	9 (11.11%)
For minor and medium sized surgeries, being risky in large surgeries	4 (4.94%)
Only for major surgeries	1 (1.23%)
PRE-OPERATIVE FASTING ABBREVIATION IS CONTRAINDICATED IN*	
Patients with delayed gastric emptying or gastroesophageal reflux	53 (64.63%)
Urgency and emergency surgeries	46 (56.10%)
Patients who presented subocclusion/occlusion intestinal	39 (47.56%)
Major surgeries involving the gastrointestinal tract	19 (23.17%)
Obese patients	17 (20.73%)
Pregnant patients	12 (14.63%)
Minor surgeries	11 (13.41%)
Diabetic patients	11 (13.41%)

*More than one response options was allowed in the question.

General knowledge of dietitians about preoperative fasting related practices in hospitals is described in Table 3. Nearly half of the institutions were still following traditional practices, with total fasting after 10pm or midnight, regardless of the scheduled surgery time, while only 8.33% respected the period defined by the unit's fasting abbreviation protocol. According to participants, the average preoperative fasting time practiced is of 8 hours or more in 82.14% of hospitals.

Tabela 3. General knowledge of dietitians about practices related to preoperative fasting carried out in hospitals in Rio de Janeiro. Rio de Janeiro-RJ, 2023.

THE FASTING PERIOD RECOMMENDED IN YOUR HOSPITAL UNIT IS	
Total fasting after 10p.m. or midnight regardless of the time scheduled for surgery	44 (52.38%)
Total fasting after 10p.m. or midnight for surgeries scheduled for the morning shift and after 0.6a.m. (breakfast) for surgeries scheduled for the afternoon shift	17 (20.24%)
Varies according to medical prescription	16 (19.05%)
The fasting abbreviation protocol from unit is followed	7 (8.33%)
AVERAGE PREOPERATIVE FASTING TIME PRACTICED	
2-4 hours	2 (2.38%)
4-6 hours	6 (7.14%)
8 -10 hours	19 (22.62%)
10-12 hours	16 (19.05%)
12-16 hours	24 (28.57%)
> 16 hours	10 (11.90%)
I don't know	7 (8.33%)

Tabela 3. General knowledge of dietitians about practices related to preoperative fasting carried out in hospitals in Rio de Janeiro. Rio de Janeiro-RJ, 2023.(Cont)

DOES YOUR HOSPITAL HAVE A FASTING ABBREVIATION PROTOCOL?	
Does not exist	43 (51.81%)
Unknown	8 (9.64%)
Yes and it's widely used	12 (14.46%)
Yes, but is little used	17 (20.48%)
Yes, but I never had access	3 (3.61%)
WHAT IS RECOMMENDED IN YOUR UNIT'S FASTING ABBREVIATION PROTOCOL? (n=49)*	
Only adjustments to the diet without the use of modules/supplements	3 (6.12%)
Depends on surgical procedure	1 (2.04%)
Clear liquids with maltodextrin 12.5%+protein source 3h before the procedure	5 (10.20%)
Clear liquids with maltodextrin 12.5% 2h before the procedure	18 (36.73%)
Clarified nutritional supplement up to 3hours before the procedure	16 (32.65%)
Does not have	1 (2.04%)
Unknown	12 (24.49%)
Clear juices or coconut water (in the absence of maltodextrin)	1 (2.04%)

*More than one response options was allowed in the question.

Around 40% of professionals mentioned the existence of a fasting abbreviation protocol at the hospitals where they worked, still 9.64% were unaware of its existence. There was no association between the hospital size and the occurrence of such tool ($p=0.265$) (Table 4). The most recommended methods for fasting abbreviation reported in this research were clear liquids offer enriched with maltodextrin 12.5% 2 hours before the procedure (36.73%) and clarified nutritional supplements intake up to 3 hours before the procedure (32.65%).

Table 4. Assessment of the association between hospital size and the existence of the fasting abbreviation protocol and training time, length of experience and type of specialization on professional's knowledge. Data compared using the Chi-square test, $p < 0.05$. Rio de Janeiro-RJ, 2023.

	Having Protocol		<i>p</i>
	Yes	No	
HOSPITAL SIZE			
Medium	6 (28.6%)	15 (71.4%)	0.265
Large	25 (42.4%)	34 (57.6%)	
	Knowledge about current fasting recommendations		<i>p</i>
	Yes	No	
TIME OF GRADUATION			
≤ 15 years	32 (64.0%)	18 (36,0 %)	0.258
>15 years	25 (75.8%)	8 (24,2%)	
TEMPO DE ATUAÇÃO			
≤ 15 years	34 (61.8%)	21 (38.2 %)	0.059
>15 years	23 (82.1%)	5 (17.9%)	
TIPO DE ESPECIALIZAÇÃO			
Clinical Nutrition	8 (23.5%)	26 (76.5%)	0.412
Others	21 (31.3%)	46 (68.7%)	

The implementation of new routines is not a simple task and is not always translated into practice changes. Opposition from professionals in adopting new practices (78.79%), lack of knowledge on the subject (65.15%), and non-authorization of the surgical team (50%) were pointed out as the main factors that hinder the implementation of the preoperative fasting abbreviation protocol (Figure 1a). Among the reasons indicating its execution failure are the lack of communication between different healthcare teams (32.26%) and low team adherence (27.42%) (Figure 1b).

Dietitians recognized the benefits of preoperative fasting abbreviation; 91.6% consider that this practice reduces surgical stress, 79.5% believe it aids in patient recovery, and 68.7% state that it increases the feeling of well-being and reduces postoperative discomfort. Only one participant understands it would impair digestive anastomoses healing (Figure 1c).

Figure 1. Reasons for failure to execute, challenges in implementing and opinion of Dietitian’s in the state of Rio de Janeiro on preoperative fasting abbreviation.

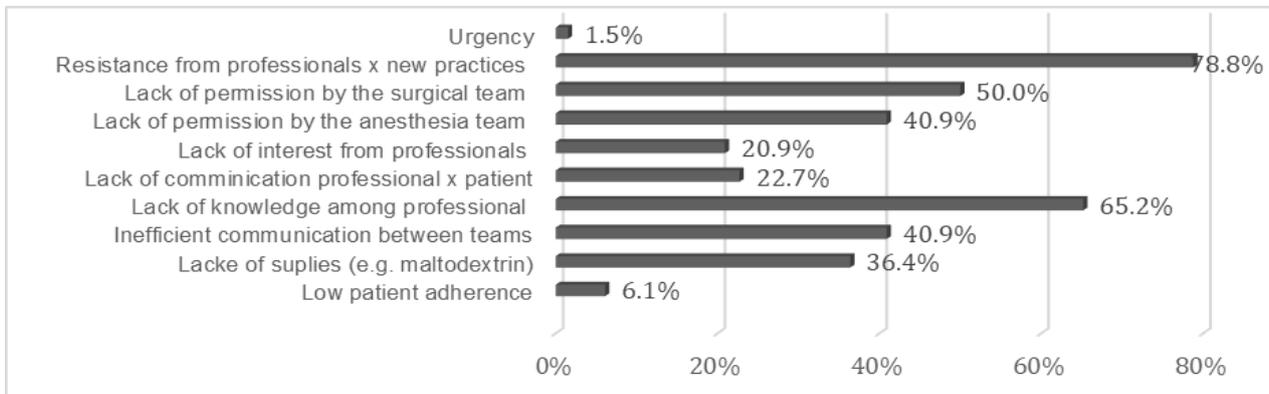


Figure 1a: Challenges to implementing the fasting abbreviation protocol, according to nutritionists from the state of Rio de Janeiro (n=66). *More than one answer option was accepted for the question.

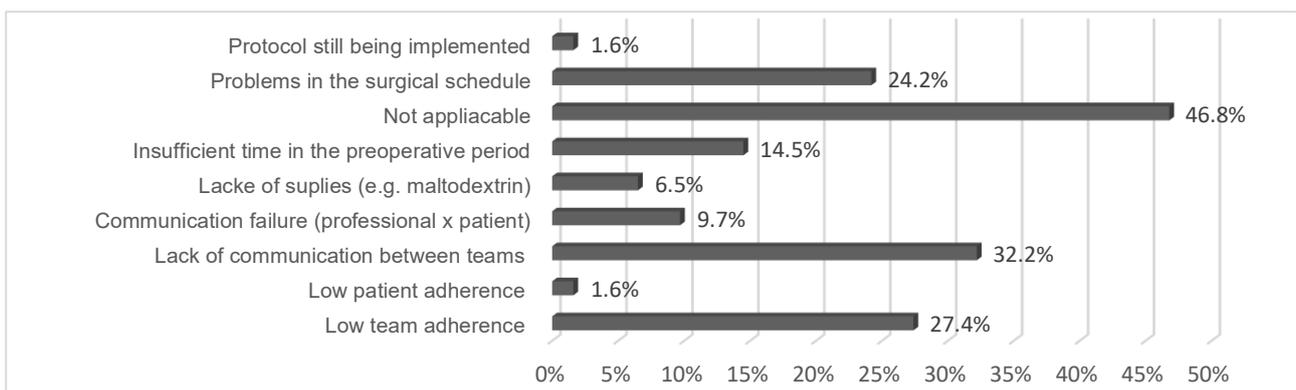


Figure 1b: Reasons for failure in executing the fasting abbreviation protocol, in the opinion of Nutritionists from the state of Rio de Janeiro (n=62). *More than one answer option was allowed for the question.

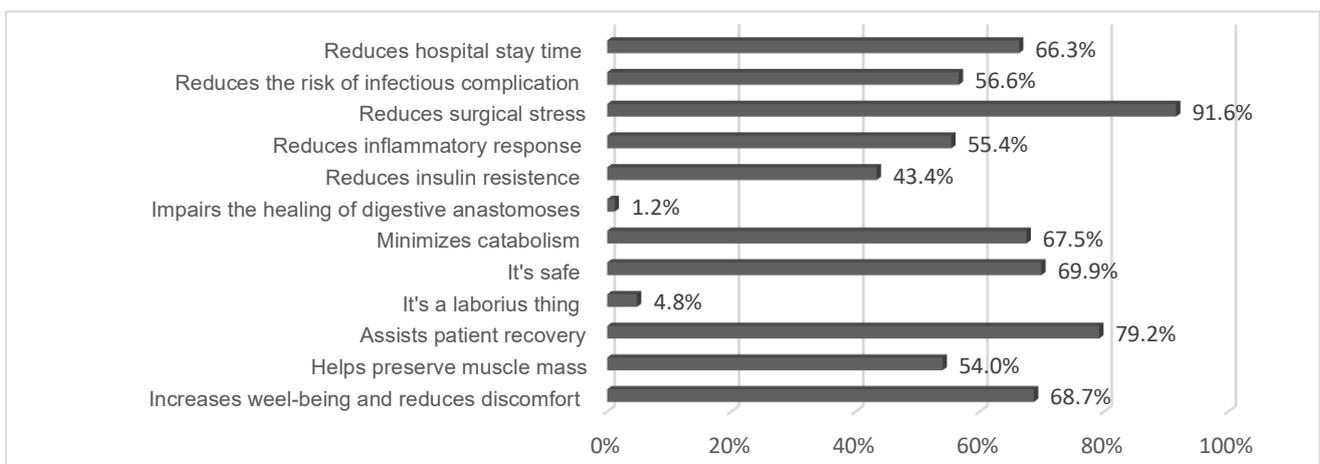


Figure 1c: Opinion of Nutritionists from the state of Rio de Janeiro on abbreviation of preoperative fasting (n=83). *More than one answer option was allowed for the question.

DISCUSSION

In the last 25 years, literature has supported the adoption of perioperative care through multimodal interventions to enhance postoperative outcomes. Since then, several organizations have published guidelines based on evidence-based practices to guide the treatment of surgical patients.¹⁶⁻¹⁸ The results of this study show that only 8.33% of institutions follow the guidelines described in the abbreviated fasting protocol, and that in 11.9% preoperative fasting exceeds 16 hours.

Current recommendations for fasting were accurately described in this research by 68.7% of the dietitians, corresponding to Panjiar et al.¹⁹ findings, in which 69% of the anesthesiologists correctly described these recommendations. The percentage of correct answers was not influenced by time of graduation ($p=0.258$), time of experience working in a hospital setting ($p=0.059$) or professional specialization ($p=0.412$), similar to what was observed in Paul et al.,²⁰ where the experience did not impact the assessment of knowledge about preoperative fasting guidelines. Similar scores were obtained regardless the time (more or less than five years) of experience of surgeons. A study evaluating knowledge, attitude, and practice of anesthesiology residents and residents from different surgical specialties regarding preoperative fasting found that, although 69% of residents claimed to be aware of the benefits of shortening preoperative fasting, 89.8% reported incorrectly the guidelines proposed by the ASA for adult individuals, providing inappropriate instructions to patients.²¹

Abbreviated fasting is recommended for individuals of all ages, undergoing elective surgeries,^{7,22} except in conditions that increase the risk of regurgitation and pulmonary aspiration, like metabolic disorders, delayed gastric emptying, difficult airway management,²² acute intra-abdominal processes and emergency procedures.^{23,24}

Delay in gastric emptying or gastro esophageal reflux was indicated by the majority of professionals (64.6%) as a reason for contraindicating the abbreviation of fasting; obese patients (20.7%), diabetics (13.4%), and pregnant women (14.6%) were also mentioned as ineligible. There is evidence that abbreviated fasting may be safe in some situations that promote gastric emptying delay, such as in patients with obesity, controlled gastroesophageal reflux, compensated diabetes mellitus without insulin use and gastroparesis, and in pregnant women not in labor.^{7,25} Nevertheless, it is emphasized that more studies are needed in these populations and preoperative clinical assessment is crucial to define patient eligibility.

Preoperative fasting aims to reduce the volume and acidity of stomach contents to minimize the risk of regurgitation and aspiration of gastric contents during surgeries under anesthesia.²⁶ The prescription of absolute fasting from midnight is a traditional used approach by surgeons for its ease of guidance, avoiding calculations and adjustments in the diet, and due to its simple execution.^{27,28} Its use has also been justified as a means to prevent cancellations and unexpected changes in the surgical schedule.²³ In this study, 52.38% of participants stated that in their institution, fasting is recommended after 10 p.m. or midnight regardless of the time of surgery. In 20.24% of hospitals, overnight fasting is prescribed for morning surgeries and fasting after breakfast for surgeries scheduled in the afternoon. Of the 64 professionals evaluated by Rawlani et al.,²⁹ 43.6% considered fasting from midnight as the best method to prevent pulmonary aspiration. However, Murphy et al.³⁰ when comparing patients who ingested clear liquids 2-3 hours before surgery with those subjected to absolute fasting after midnight, observed similar delays in both groups, a lower incidence of regurgitation in the intervention group and no episodes of aspiration for both groups.

The provision of carbohydrate-enriched drinks 2 hours before anesthetic induction is strongly recommended by guidelines related to accelerated postoperative recovery.³¹ ACERTO proposes offering 200ml of clear liquids containing 12.5% of maltodextrin.⁷ Various forms of fasting abbreviation were reported

by the participants, with the most common being the provision of clear liquids containing 12.5% maltodextrin 2 hours before surgery. Eight participants reported more than one fasting abbreviation method in their hospital unit. Three mentioned that fasting abbreviation was done only through diet adjustments, probably indicating the lack of nutritional modules/supplements and the administration of strained juices or non-caloric clear liquids. The adoption of different approaches may be related to the types of surgeries performed, patient characteristics (e.g., age, nutritional status, and comorbidities), and the availability of resources.

All participants in an Australian study agreed that the preoperative fasting time for patients in a quaternary hospital was excessive and harmful, acknowledging that the implementation of evidence-based fasting abbreviation guidelines is essential to optimize outcomes. However, only 9.09% were aware that the hospital had already adopted practices proposed by ERAS in colorectal and orthopedic surgeries, indicating a lack of professional engagement with the process.²⁷ A similar situation was revealed in this study; the lack of access to the fasting abbreviation protocol (3.6%), unawareness of its existence in the hospital unit (9.6%), or ignorance of its execution (24.5%) may indicate insufficient training of professionals, limited involvement of dietitians in the multidisciplinary team, and modest participation of dietitians in the development and execution of protocols. An issue not evaluated in this work but directly associated with impairments in the quality of care is the insufficient staffing of dietitians in the hospital environment.³²

About 33% of participants attributed the execution failure of the protocol in their hospital unit to a lack of communication between the health teams. The integration of scientific evidence into clinical practice is a complex process involving political, organizational, financial, cultural, and scientific considerations.³³ Among the barriers for the implementation of the fasting abbreviation protocol mentioned by dietitians, the resistance of professionals to adopting new practices (78.79%), lack of theoretical knowledge (65.15%), and inefficient communication between teams (40.91%) are directly related to the technical staff, aligning with the literature.^{33,34}

Byrnes et al.³⁵ interviewed 13 professionals from different health categories and identified the complexity of systems and processes, strong hierarchy in decision-making (by surgeons), combined with a lack of technical knowledge, communication failure, and deficient teamwork as the main barriers to aligning perioperative nutritional care practices in the general surgery wards of an Australian hospital with those proposed by ERAS. Other authors pointed out inefficient communication between teams and between teams and patients, the absence of a hospital policy for preoperative care, and the lack of formal lectures/classes/symposiums for professional training as factors limiting the practical application of guidelines.^{21,27,35}

Obtaining local information about the knowledge, implementation, and perception of perioperative care helps identify existing gaps, whether they are institutional, structural, or cultural, and directs strategies aimed at standardizing more appropriate practices.³⁶ The scientific basis is not sufficient for the guidelines to be incorporated into clinical practice, therefore training and awareness through continuing education programs and encouraging communication among teams are essential to increase engagement and ensure the successful implementation of protocols.^{29,34} Training should extend to all professionals involved in perioperative care, and the dissemination of printed information can be a strategy to ensure that patients are properly informed.²⁴

Prolonged fasting promotes negative physiological and metabolic effects, such as potentiation of the metabolic response to trauma, increased protein catabolism and insulin resistance and increased discomfort (stress, thirst, hunger, malaise, fatigue, and anxiety) in the perioperative period.^{28,37-39} Dietitians perception indicate that this practice is safe (69.88%), reduces surgical stress (91.57%), aids patient recovery (79.52%), and minimizes catabolism (67.47%). A study conducted by Panjjar et al.¹⁹ demonstrated that participants

believed that the administration of clear liquids containing carbohydrates up to 2 hours before surgery reduces discomfort (81%), minimizes the metabolic response to stress (35%) and reduces intraoperative hypotension (32%). Anesthesiologists indicated greater patient satisfaction, increased comfort and well-being, and reduced perioperative complications as reasons justifying fasting abbreviation.⁴⁰

This study has some limitations. First of all, the sample consisted of dietitians working in hospitals in the north, northwest, and metropolitan regions of Rio de Janeiro, with no participants from other regions of the state or other Brazilian states. Secondly, the research method was based on the use of questionnaires, and the accuracy of the results may have been affected by respondent bias. The strength lies in its pioneering nature, as no other studies assessing the knowledge and perception of dietitians regarding preoperative fasting abbreviation protocols were identified and those carried out with other categories also did not present a large sample size.

CONCLUSION

Although the evaluated dietitians are aware of current recommendations for fasting abbreviation included in guidelines related to enhanced postoperative recovery, the understanding of the indication and application is still superficial and should be deepened. Furthermore, the lack of knowledge about the existence and/or execution of the protocol used in institutions signaled the demand for professionals training and may demonstrate a modest participation of the dietitian in the multidisciplinary team.

The results found in this research indicate gaps in perioperative care routines in hospitals in the state of Rio de Janeiro, with preoperative fasting practices exceeding those recommended in the literature and the absence or irregular execution of the fasting abbreviation protocol in most units. Considering the crucial role of Nutritional Therapy in postoperative recovery, clinical dietitians need to stay updated and integrated into multidisciplinary teams and strive to ensure safety and quality in patient care.

REFERENCES

1. Mendelson CL. The aspiration of stomach contents into the lungs during obstetric anesthesia. *Am J Obstet Gynecol.* 1946;52(2):191-205. [https://doi.org/10.1016/s0002-9378\(16\)39829-5](https://doi.org/10.1016/s0002-9378(16)39829-5).
2. Friedrich S, Meybohm P, Kranke P. *Nulla Per Os (NPO) guidelines: time to revisit?* *Curr Opin Anaesthesiol.* 2020;33(6):740-45. <https://doi.org/10.1097/ACO.0000000000000920>
3. American Society of Anesthesiologists Committee (ASA). Practice guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures: a report by the American Society of Anesthesiologists Task Force on Preoperative Fasting. *Anesthesiology.* 1999;90:896-905. <https://doi.org/10.1097/ALN.0000000000001452>.
4. Fearon KCH, Ljungqvist O, Von Meyenfeldt M, Revhaug A, Dejong CHC, Lissens K, et al. Enhanced recovery after surgery: a consensus review of clinical care for patients undergoing colonic resection. *Clin Nutr.* 2005;24(3):466-477. <https://doi.org/10.1016/j.clnu.2005.02.002>.

5. Aguiar-Nascimento JE, Bicudo-Salomão A, Caporossi C, Silva RDM, Cardoso EA, Santos TP. Acerto pós-operatório: avaliação dos resultados da implantação de um protocolo multidisciplinar de cuidados peri-operatórios em cirurgia geral. *Rev Col Bras Cir.* 2006;33(3):181-188. <https://doi.org/10.1590/S0100-69912006000300010>.
6. Melnyk M, Casey RG, Black P, Koupparis AJ. Enhanced recovery after surgery (ERAS) protocols: Time to change practice? *Can Urol Assoc J.* 2011;5(5):342-348. <https://doi.org/10.5489/cuaj.11002>.
7. Aguiar-Nascimento JE, Bicudo-Salomão A, Waitzberg DL, Dock-Nascimento DB, Correa MIT, Campos ACL, et al. Diretriz ACERTO de intervenções nutricionais no perioperatório em cirurgia geral eletiva. *Ver Col Bras Cir.* 2017; 44(6):633-648. <https://doi.org/10.1590/0100-6991201700600>.
8. Evans DC, Martindale RG, Kiraly LN, Jones CM. Nutrition optimization prior to surgery. *Nutr Clin Pract.* 2014; 29(1):10-21. <https://doi.org/10.1177/0884533613517006>.
9. Morrison CE, Ritchie-Mclean S, Jha A, Mythen M. Two hours too long: time to review fasting guidelines for clear fluids. *Br J Anaesth.* 2020; 124(4):363-366. <https://doi.org/10.1016/j.bja.2019.11.036>.
10. Ljungqvist O, Boer HD, Balfour A, Fawcett WJ, Lobo DN, Nelson G, et al. Opportunities and challenges for the next phase of enhanced recovery after surgery: a review. *JAMA Surg.* 2021;156(8):775-784. <https://doi.org/10.1001/jamasurg.2021.0586>.
11. Denkyi L. An exploration of pre-operative fasting practices in adult patients having elective surgery. *Br J Nurs.* 2020;29(7):436-441. <https://doi.org/10.12968/bjon.2020.29.7.436>.
12. Zhu Q, Li Y, Deng Y, Chen J, Zhao S, Bao K, Lai L. Preoperative fasting guidelines: where are we now? findings from current practices in a tertiary hospital. *J Perianesth Nurs* 2021; 36(4): 388-392. <https://doi.org/10.1016/j.jopan.2020.09.002>.
13. Conselho Federal de Nutricionista (CFN). Resolução CFN nº 600, de 25 de fevereiro de 2018. Dispõe sobre a definição das áreas de atuação do nutricionista e suas atribuições, indica parâmetros numéricos mínimos de referência, por área de atuação, para a efetividade dos serviços prestados à sociedade e dá outras providências. *Diário Oficial da União.* 20 abr 2018; 76(Seção 1):157-211.
14. Oliveira MJF, Araujo AJS, Mazer VB. Papel do nutricionista em uma equipe de saúde hospitalar multiprofissional: percepção e expectativas de seus integrantes. *BRASPEN J.* 2020;35(3):270-278. <https://dx.doi.org/10.37111/braspenj.2020353012>.
15. Brasil. Resolução nº 466, de 12 de dezembro de 2012. Aprova as seguintes diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. *Diário Oficial da União,* 13 jun 2013; 12 (Seção 1):59-70.

16. Kehlet H, Wilmore DW. Evidence-based surgical care and the evolution of fast-track surgery. *Ann Surg*. 2008;248(2):189-198. <https://doi.org/10.1097/SLA.0b013e31817f2c1a>.
17. Chen Z, Liu AJ, Cen Y. Fast-track program vs traditional care in surgery for gastric cancer. *World J Gastroenterol*. 2014;20(2):578-583, 2014. <https://doi.org/10.3748/wjg.v20.i2.578>.
18. Nogueira RT, Costa VWL, Sató A. Análise unicêntrica do tempo de jejum pré-operatório em pacientes submetidos à cirurgia cardíaca. *BRASPEN J*. 2019;34(2):139-144.
19. Panjari P, Kochhar A, Vajifdar H, Bhat K. A prospective survey on knowledge, attitude and current practices of pre-operative fasting amongst anaesthesiologists: A nationwide survey. *Indian J Anaesth* 2019;63(5):350-355. https://doi.org/10.4103/ija.IJA_50_19.
20. Paul PA, Joselyn AS, Pande PV, Gowri M. A cross sectional, observational study to evaluate the surgeons' knowledge and perspective on preoperative fasting guidelines in a tertiary care teaching hospital in Southern India. *J Anaesthesiol Clin Pharmacol*. 2022;38(3):434-439. https://doi.org/10.4103/joacp.JOACP_413_20.
21. Gupta N, Patnaik S, Lakkegowda LB, Jaiswal A, Dwivedi D. Preoperative fasting: knowledge, attitude, and practice of postgraduate trainees at a tertiary care hospital—an observational study. *Ain-Shams J Anesthesio*. 2022;14(1):23-30. <https://doi.org/10.1186/s42077-022-00230-5>.
22. American Society of Anesthesiologists Committee (ASA). Practice guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures: an updated report by the American Society of Anesthesiologists Committee on Standards and Practice Parameters. *Anesthesiology*. 2017;114(3):495-511. <https://doi.org/10.1097/ALN.0000000000001452>
23. Peden CJ; Aggarwal G, Aitken RJ, Anderson ID, Foss NB, Cooper Z, et al. Guidelines for Perioperative Care for Emergency Laparotomy Enhanced Recovery After Surgery (ERAS) Society recommendations: part 1—preoperative: diagnosis, rapid assessment and optimization. *World J Gastroenterol*. 2021;45(5):1272-1290. <https://doi.org/10.1007/s00268-021-05994-9>.
24. Joshi GP, Abdelmalak BB, Weigel W. A.; Kuo, C. I.; Stricker, P. A.; Tipton, T, et al. American Society of Anesthesiologists Practice Guidelines for Preoperative Fasting: Carbohydrate-containing Clear Liquids with or without Protein, Chewing Gum, and Pediatric Fasting Duration—A Modular Update of the 2017 American Society of Anesthesiologists Practice Guidelines for Preoperative Fasting. *Anesthesiology*. 2023;138(2):132-151. <https://doi.org/10.1097/ALN.0000000000004381>.
25. Smith I, Kranke P, Murat I, Smith A, O'Sullivan G, Søreide E, et al. Perioperative fasting in adults and children: guidelines from the European Society of Anaesthesiology. *Eur. J. Anaesthesiol*. 2011;28(8):556-569. <https://doi.org/10.1097/EJA.0b013e3283495ba1>.

26. Yimer AH, Haddis L, Abrar M, Seid AM. Adherence to pre-operative fasting guidelines and associated factors among pediatric surgical patients in selected public referral hospitals, Addis Ababa, Ethiopia: Cross sectional study. *Ann Med Surg.* 2022;78:103813. <https://doi.org/10.1016/j.amsu.2022.103813>.
27. Carey S, Hogan S. Failure in Systems and Culture: Barriers That Prevent Implementation of Evidence-Based Fasting Times for Patients in the Acute Care Setting. *J Parenter Enteral Nutr.* 2021;45(5):933-940. <https://doi.org/10.1002/jpen.1961>.
28. Carvalho CALDB, Carvalho AAD, Preza AD, Nogueira PLB, Mendes KBV, Dock-Nascimento DB, DE Aguiar-Nascimento JE. Benefícios Metabólicos e Inflamatórios da Abreviação do Jejum Pré-operatório em Cirurgia Pediátrica. *Ver Col Bras Cir.* 2020;47:p:e20202353. <https://doi.org/10.1590/0100-6991e-20202353>.
29. Rawlani SS, Dave NM, Karnik PP. The preoperative fasting conundrum: an audit of practice in a tertiary care Children's Hospital. *Turk J Anaesthesiol Reanim.* 2022;50(3):207-212. <https://doi.org/10.5152/TJAR.2022.21132>.
30. Murphy GS, Ault ML, Wong HY, Szokol JW. The effect of a new NPO policy on operating room utilization. *J Clin Anesth* 2000;12(1):48-51. [https://doi.org/10.1016/s0952-8180\(99\)00139-7](https://doi.org/10.1016/s0952-8180(99)00139-7).
31. Lambert E, Carey S. Practice guideline recommendations on perioperative fasting: a systematic review. *J Parenter Enteral Nutr.* 2016;40(8):1158-1165. <https://doi.org/10.1177/0148607114567713>.
32. Pedroso CGT, Sousa AAD, Salles RKD. Cuidado nutricional hospitalar: percepção de nutricionistas para atendimento humanizado. *Ciênc. Saúde Colet.* 2011;16(Supl.1):1155-1162. <https://doi.org/10.1590/S1413-81232011000700047>
33. Bosse G, Breuer J, Spies C. The resistance to changing guidelines—what are the challenges and how to meet them. *Best Pract Res Clin Anaesthesiol.* 2006;20(3):379-395. <https://doi.org/10.1016/j.bpa.2006.02.005>.
34. Cohen R, Gooberman-Hill R. Staff experiences of enhanced recovery after surgery: systematic review of qualitative studies. *BMJ open.* 2019;9(2):e022259. <https://doi.org/10.1136/bmjopen-2018-022259>
35. Byrnes A, Young A, Mudge A, Banks M, Bauer J. Exploring practice gaps to improve Perioperative Nutrition Care (EXPERIENCE Study): a qualitative analysis of barriers to implementation of evidence-based practice guidelines. *Eur J Clin Nutr.* 2019;73(1):94-101. <https://doi.org/10.1038/s41430-018-0276-x>.
36. Ahmad H, Shehdio W, Tanoli O, Deckelbaum D, Pasha T. Knowledge, Implementation, and Perception of Enhanced Recovery After Surgery Amongst Surgeons in Pakistan: A Survey Analysis. *Cureus.* 2023;15(9). <https://doi.org/10.7759/cureus.46030>

37. Çakar E, Yılmaz E, ÇAkar E, Baydur H. The effect of preoperative oral carbohydrate solution intake on patient comfort: a randomized controlled study. *J of Peri Anesth Nurs* 2017;32(6):589-599.
<https://doi.org/10.1016/j.jopan.2016.03.008>.
38. Dorrance M, Copp M. Perioperative fasting: A review. *J Perioper Pract*. 2020;30(7-8):204-209.
<https://doi.org/10.1177/1750458919877591>.
39. Sharma V, Prasad J, Choudhary K, Choudhary D. Traditional Prolonged Fasting: It's Need of Time to Change the Practice-A Prospective Observational Study. *Eur J Mol Clin Med*. 2022;9(3):2245-2254.
40. Salman OH, Asida SM, Ali HS. Current knowledge, practice and attitude of preoperative fasting: A limited survey among Upper Egypt anesthetists. *Egypt J Anaesthesia*. 2013;29(2):125-130.
<https://doi.org/10.1016/j.egja.2012.10.007>

Contributors

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