

A Questionnaire Based Study of Postgraduate Trainees on Their Knowledge, Attitude and Practice of Preoperative Fasting in Cases of Elective Surgery at a Tertiary Care Hospital

Bhagyashri Morepatil ¹, Pallavi Waghalkar ², Pooja Damle ³, Sharyu Gaoture ¹, Vikram Waghalkar ⁴, Raed Kalsekar ^{*5}, Alhad Mulkalwar ⁶

¹Senior Resident, Department of Anaesthesiology, King Edward Memorial Hospital and Seth Gordhandas Sunderdas Medical College, Maharashtra, India.

²Additional Professor, Department of Anaesthesiology, King Edward Memorial Hospital and Seth Gordhandas Sunderdas Medical College, Maharashtra, India.

³Assistant Professor, Department of Anaesthesiology, Topiwala National Medical College and BYL Nair Charitable Hospital, Maharashtra, India.

⁴Consultant Anaesthesiology, Apollo Hospital, Belapur, Navi Mumbai, India.

⁵3rd Year Undergraduate Student, Seth Gordhandas Sunderdas Medical College and King Edward Memorial Hospital, Maharashtra, India.

⁶Tutor, Department of Pharmacology, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune, Dr. D.Y. Patil Vidyapeeth, Pimpri, Pune (Deemed to be University), Pune, Maharashtra India.

*Corresponding Author: Raed Kalsekar; raedkalsekar@gmail.com

Abstract

Introduction: Preoperative fasting is crucial to minimize the risk of pulmonary aspiration during anaesthesia. The American Society of Anaesthesiologists (ASA) recommends specific fasting durations for solids and liquids. However, outdated practices such as “nil per oral after midnight” remain prevalent. This study assesses the knowledge, attitudes, and practices of postgraduate trainees regarding preoperative fasting guidelines. **Materials and Methods:** A cross-sectional observational study was conducted over six months at a tertiary care hospital in Mumbai. A structured questionnaire was administered to 150 postgraduate trainees from surgical and anaesthesiology specialties. Data were analyzed using IBM SPSS Statistics v25.0, with statistical significance set at $p < 0.05$. **Results:** While 71.33% of residents correctly identified the 6–8 hour fasting guideline for solids in adults, only 40% knew the 2-hour guideline for clear fluids. In practice, fewer trainees adhered to these guidelines. For paediatric patients, only 4% correctly identified the 4-hour fasting period for breast milk. Most trainees (50.67%) relied on seniors for guidance, and major barriers included high workload and inconsistent instructions between departments. Despite this, 70% acknowledged the benefits of shorter fasting durations. **Conclusion:** Although knowledge of ASA guidelines among postgraduate trainees is moderately adequate, implementation is suboptimal. Institutional efforts are needed to align practices with current evidence and enhance adherence to ERAS protocols.

Keywords: Preoperative Care, Fasting, Postgraduate Education, Clinical Competence, Attitude of Health Personnel.

Introduction

Preoperative fasting, as defined by the American Society of Anaesthesiologists (ASA), is a mandatory interval before a procedure during which patients must refrain from consuming both liquids and solids orally, with the goal of minimizing the volume and acidity of stomach contents to reduce the risk of regurgitation and aspiration during anaesthesia. This requirement applies to both adults and children and is essential in reducing the likelihood of aspiration pneumonia particularly Mendelson Syndrome during the

induction of general anaesthesia. While preoperative fasting is a standard protocol, extended fasting periods are often excessive and have been associated with adverse effects including distress, confusion, hypoglycaemia, headaches, dehydration, electrolyte imbalances, postoperative nausea and vomiting (PONV), and increased insulin resistance. General anaesthesia suppresses laryngeal reflexes, and research has shown that a gastric fluid volume of 25 ml (0.4 ml/kg) significantly increases the risk of pulmonary aspiration. Studies have also indicated that consuming solid food up to 6 hours and light meals up to 4 hours before

anaesthesia can raise both the volume and acidity of gastric contents. To address these issues, updated guidelines from the ASA, European Society of Anaesthesiology, and Royal College of Anaesthetists have categorized intake into solids, clear fluids, breast milk, nonhuman milk, light solids, and heavy solids, with specific fasting recommendations. In 2017, the ASA revised its guidelines, recommending that adults may consume a solid meal up to 8 hours before elective surgery, a light meal up to 6 hours prior, and clear fluids including water, fruit juices without pulp, clear tea, and black coffee up to 2 hours before surgery. For paediatric patients, clear fluids are permitted up to 2 hours before surgery, breast milk up to 4 hours prior, and nonhuman milk, including infant formula, up to 6 hours before. Despite these updated recommendations, many institutions continue to enforce unnecessarily prolonged fasting protocols such as "nil by mouth after midnight," leading to patient discomfort, anxiety, dehydration, hypovolaemia, and hypoglycaemia. Tertiary care hospitals often entrust the care of surgical patients to postgraduate trainees, making it vital to evaluate whether their practices align with institutional policies and international guidelines. Enhanced Recovery After Surgery (ERAS) programs advocate for reduced fasting periods, which have been shown to improve recovery outcomes, reduce hospital stays, lower complication rates, and decrease healthcare costs. However, patients with conditions like diabetes mellitus, increased intracranial pressure, hiatus hernia, gastrointestinal obstruction, recurrent regurgitation, dyspepsia, prior gastrointestinal surgeries, or those taking opioids or with morbid obesity, may experience delayed gastric emptying and require special consideration. The present observational study aims to assess the extent to which the knowledge, attitude, and practices of postgraduate trainees in surgical specialties and anaesthesiology align with current preoperative fasting guidelines. The primary objective is to assess the knowledge status of postgraduate trainees regarding fasting guidelines, while the secondary objective is to evaluate their attitudes and current practices.

Materials and Methods

This cross-sectional observational study was conducted over a period of six months at a tertiary care hospital in Mumbai, following approval from the institutional ethics committee. The study aimed to assess the knowledge, attitude, and practices regarding preoperative fasting before anaesthesia for elective surgery among postgraduate trainees in various specialties, including anaesthesiology, general surgery, ENT, orthopaedics, plastic surgery, gastrointestinal (GI) surgery, gynaecology, ophthalmology, neurosurgery, and urosurgery. A total sample size of 150 postgraduate trainees was targeted, based on findings from a similar study conducted at the National Hospital in Sri Lanka, where only 65% of healthcare workers were aware of existing fasting guidelines. This proportion was used to calculate the required sample size for the current study. All eligible postgraduate trainees were personally approached, and after obtaining informed consent, each participant was asked to complete a structured questionnaire in the form of a case record form focusing on knowledge, attitudes, and practices related to preoperative fasting. Responses were documented in an Excel sheet and analyzed accordingly. Data entry was performed using Microsoft Excel 2013 64-bit, as part of Microsoft Office Professional Plus 2013. Statistical analysis was conducted using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp., Armonk, NY, Released 2017). Data were summarized using proportions, percentages, and contingency tables. Comparisons of awareness levels among different groups of residents were carried out using the questionnaire responses, with

statistical tests including the Chi-square test and the Kruskal-Wallis test.

Results

Questionnaires were distributed amongst 150 residents from anaesthesia, orthopaedic, OB GYN, ENT, surgery and super-speciality (plastic surgery) departments. Response rate was 100%. Data collected and analysed. A probability value (p value) less than 0.05 was considered statistically significant. Demographic data tabulated below. The table 1, represents the age distribution of individuals in a specific dataset. Most participants are within the 25-29 age group, accounting for 56% of the total, indicating a younger demographic. The least represented age group is those over 35 years, making up only 6.67%. This distribution provides insights into the predominant age groups engaging in or affected by the observed activity. The mean age of the provided data set is approximately 26.75 years, with a standard deviation of approximately 2.23 years. Out of 150 residents 79 (52.67%) were females and 71(47.33%) are male residents. The distribution of the departments among the participants is as follows: Anaesthesia has the highest representation with 66 participants, accounting for 44.00% of the total. This is followed by Orthopaedics (Ortho) with 28 participants (18.67%), Obstetrics and Gynaecology (OB GYN) with 24 participants (16.00%), and Surgery with 15 participants (10.00%). Gastrointestinal (GI) Surgery has 5 participants (3.33%), while Ear, Nose, and Throat (ENT) has 9 participants (6.00%). Plastic Surgery has the lowest representation with 3 participants, making up 2 % of the total. The table illustrates the fasting hours for solids prior to surgery in adults. Notably, no residents responded with a fasting window of 2 to 4 hours. The majority, 107 (71.33%), are aware of ASA fasting period guidelines of 6 to 8 hours, while as per 43 (28.67%) residents fasting period guideline is more than 8 hours. As per 60(40%) residents able to correctly describe ASA fasting guidelines pertaining to preoperative fasting for clear fluids in adults is 2 hrs, whereas 69(46%) residents responded for 4 hrs fasting. According to 21 (14%) of the residents it is 6-8 hrs and no one has responded for more than 8 hours fasting for clear liquids.

Amongst 150 residents 85(56.67%) responded that 2 hours is preoperative fasting for clear fluids in paediatric population followed by 42 (28%) believes that it is 8 hours for clear fluids. 11 (7.33%) residents responded it to be 4 hours, 8 (5.33%) residents responded for 6 hours and 4 (2.67%) residents responded to be 10 hours of fasting. Amongst 150 residents only 6 (4%) residents are aware of 4 hours fasting for breast milk in paediatric patients as per ASA. 99(66%) of residents believes that 6 hours of and 39(26%) residents believes in 8 hours of fasting for breast milk which is not recommended by ASA. 2.67% residents responded for 10 hours and 1.33% responded for 2 hours fasting for breast milk. Out of 150 residents only 73 (48%) able to correctly describe ASA fasting guidelines for solids is 6 hrs in childrens, 69 (46%) residents responded as 8 hrs ,6 (4%) responded as 10 hrs and 2(1.33%) residents responded as 4 hrs. Figure demonstrates there is not much difference between knowledge and actual practice for fasting in adults for solids. Significant difference found in fasting guidelines in adults for clear fluids, out of 150 trainees 60 have knowledge of fasting but only 44 are following in actual practice. For paediatric fasting, a significant difference is found in guidelines for solids, clear fluids and breast milk. 72 residents are aware of 6 hours fasting for solids but only 58 follow actual practice. For breast milk 6 residents are aware of correct knowledge and whereas 20 residents are following 4hrs fasting .85 residents are aware of 2 hrs fasting for clear fluids but only 20 residents are following in actual practice. In

case Adults for solid food majority 96 (64%) residents give 8 hrs fasting instructions and 10(6.67%) residents use to give 6 hrs instructions to patients, whereas 40 (26.67%) give 10 hrs and 4 (2.67%) residents use to give 12 hrs fasting instruction for solid food for adult patients. Only 44 (29%) respondents correctly follow 2 hrs fasting instructions for clear fluids for adults, 6 (4%) residents follow 4 hrs fasting, 10(6.67%) use to follow 6 hrs and 20(13.33%) use to give 8 hrs fasting, 6 (4%) give 10 hrs fasting, whereas 4 (2.67%) residents use to give 12 hrs long fasting instructions for clear to adult patients. Out of 150 residents only 20 (13.33%) give correct instructions of 4 hrs fasting for breast milk, 30(20%) respondents give 2 hrs fasting, maximum residents 40 (26.67) follow 6 hrs fasting for breast milk. 30(20%) residents use to give 8 hrs fasting, 20(13.33%) residents follow 10 hrs fasting whereas 10(6.67%) residents use to give 12 hrs fasting instructions to paediatric patients for breast milk. Out of 150 PG trainees only 20 (13.33%) give 2 hrs fasting instructions for clear fluids in children. 40(26%) residents likes to give 4 hrs fasting majority 50(33%) respondents follow to give 6 hrs fasting instructions and 20(13.33%) use to give 8 hrs fasting instructions. 10(6.67%) Residents follows 10 hrs whereas remaining 10(6.67%) trainees use to follow prolonged 12 hrs fasting for clear fluids in paediatric patients. Maximum residents 92(61.33%) use to give 8 hrs fasting for solids, 58(38.67%) residents give 6 hrs fasting instructions for solids in children. 68 (45%) trainees prefer to give 10 hrs fasting and 52(34.67%) prefer to give 12 hrs prolonged fasting instructions to paediatric patients. This table shows the sources of information used by the respondents. The majority of information comes from seniors (50.67%), followed by textbooks (37.33%). A smaller number of respondents cited other sources and articles (6.00% each). This table shows who informed patients about fasting prior to surgery. Surgeons are the most common source (42.67%), followed by a combination of all sources (40%). Nursing staff and anaesthesiologists are less frequently cited. This table shows who monitored patients about fasting prior to surgery. Staff nurses are the most common source (46.43%), followed by resident doctors (30.36%). A small percentage reported that no one (7.14%) or they themselves (5.36%). Table represents that 83.33% residents were ready to take patients under regional anaesthesia who took clear fluid 2 hrs prior and 16.67% were not accepting. In case of general anaesthesia 73.33% residents were ready to accept whereas 26.67% were not ready to accept patients who took clear fluid 2 hrs prior. Table shows that as per 13(8.67%) residents clear fluid 2 hrs prior decreases stress response, 15(10%) residents thought that it causes less intraoperative hypotension, as per 46(30%) residents it improves patient comfort whereas only 1(0.67%) resident thought that it enhances postoperative recovery. According to the majority of residents 76(50%) clear fluid 2 hrs prior to surgery gives all of the above benefits. 105(70%) residents responded that limiting preoperative fasting is beneficial whereas 32(21%) residents thought that it may be beneficial, as per 13(8.67%) residents it is not beneficial. This table shows the different problems faced by patients. Dehydration is the most common problem as per 60(40%) residents, followed by hypovolaemia and hypoglycaemia as per 33 (22%) residents, irritability and discomfort as per (21.33%) residents, and all of the above as per (16.67%) residents. Out of 150 residents 96(64%) residents responded that guidelines are adequate for Indian patients whereas as per 31(20.67%) residents guidelines may be inadequate for Indian patients, as per 23(15.33%) residents guidelines are adequate for Indian patients. Above table suggests that as per 68(45.33%) residents implementation of ASA fasting guidelines will lose flexibility of altering the list of cases, 50(33.33%) residents thought that it will not affect flexibility of the

list of cases whereas 32(21.33%) thought that it may affect. Table suggests that 55(36.67%) residents thought that implementation of ASA fasting guidelines will cause loss of control on scheduling cases, 56(37.33%) thought that it may affect whereas 39(26%) residents thought that it will not loose the control on scheduling cases. According to 63(42%) residents, high workload is a limiting factor for not implementing ASA fasting. As per above table 43 (32%) residents thought that patient will not understand fasting instructions properly which is also limiting factor for implementation of ASA fasting guidelines, 59(39.33%) residents thought that patient may not understand whereas 48(32%) residents thought that patients can understand so it is not limiting factor for implementation of ASA fasting guidelines. As per 65(43%) high workload may be responsible and as per 22(14.67%) high workload is not responsible for implementation of ASA fasting guidelines. As per 78(52%) trainees nursing staff follow instructions, 42(28%) residents thought that nursing staff may not follow instructions properly, whereas 30(20%) residents thought that nursing staff doesn't follow instructions so it may be the limiting factor for implementation of ASA fasting guidelines. As per 58(38.67%) residents there is no difference between fasting instructions given by surgical specialties residents and anaesthesia residents. But 52(34.67%) residents thought that there may be a difference, whereas according to 40(26.67%) residents there are differing fasting instructions between surgeons and anaesthesia residents so it is limiting factor for implementation of ASA fasting guidelines.

Table 1: distribution of residents according to the age, gender and department

Category	Number of Residents	Percentage of Total (%)
Age groups		
20-24 years	34	22.67%
25-29 years	84	56.00%
30-34 years	22	14.67%
over 35 years	10	6.67%
Gender		
Female	79	52.67%
Male	71	47.33%
Department		
Anaesthesia	66	44%
Obstetrics and Gynaecology	24	16%
Orthopaedics	28	18.67%
Surgery	15	10%
GI surgery	5	3.33%
ENT	9	6%
Plastic Surgery	3	2%

Table 2: resident responses on various ASA fasting guidelines

Category	Number of Residents	Percentage of Total (%)
ASA fasting guidelines for solids in adults		
2 to 4 hours	0	0%
6 to 8 hours	107	71.33%
more than 8 hours	43	28.67%
ASA fasting guidelines for clear fluids in adults		
2 hours	60	40%
4 hours	69	46%
6 to 8 hours	21	14%
more than 8 hours	0	0%
ASA paediatric fasting hours prior to surgery for clear fluids.		
2 hours	85	56.67%

4 hours	11	7.33
6 hours	8	5.33
8 hours	42	28.00%
10 hours	4	2.67%
ASA guidelines for preoperative fasting for breast milk in paediatric Patients		
2 hours	2	1.33%
4 hours	6	4.00%
6 hours	99	66.00%
8 hours	39	26.00%
10 hours	4	2.67%
ASA guidelines for preoperative fasting for solids in paediatric patients		
4 hours	2	1.33%
6 hours	73	48.00%
8 hours	69	46.00%
10 hours	6	4.00%

Table 3: Resident responses on actual fasting hours in various categories

Category	Number of Residents	Percentage of Total (%)
Actual fasting for solids in Adults		
6 hours	10	6.67%
8 hours	96	64.00%
10 hours	40	26.67%
12 hours	4	2.67%
Actual fasting for clear fluids in Adults		
2 hours	44	29.33%
4 hours	6	4.00%
6 hours	10	6.67%
8 hours	20	13.33%
10 hours	6	4.00%
12 hours	4	2.67%
Actual paediatric fasting for breast milk		
2 hours	30	20.00%
4 hours	20	13.33%
6 hours	40	26.67%
8 hours	30	20.00%
10 hours	20	13.33%
12 hours	10	6.67%
Actual fasting for paediatric patients for clear fluids		
2 hours	20	13.33%
4 hours	40	26.67%
6 hours	50	33.33%
8 hours	20	13.33%
10 hours	10	6.67%
12 hours	10	6.67%
Actual fasting for paediatric patients for solids		
6 hours	58	38.67%
8 hours	92	61.33%
10 hours	68	45.33%
12 hours	52	34.67%

Table 4: Resident responses on sources of information and on which person monitors the patients

Category	Number of Residents	Percentage of Total (%)
Source of information		
Seniors	76	50.67%
Textbook	56	37.33%

Others	9	6.00%
Articles	9	6.00%
Who informed about fasting		
All	60	40.00%
Surgeons	64	42.67%
Nursing staff	14	9.33%
Anaesthesiologists	12	8%
Who monitors patients		
Staff nurse	78	46.43%
Resident doctor	51	30.36%
No one	12	7.14%
Self	9	5%

Table 5: Resident responses on acceptance of patients falling under various categories

Category	Number of Residents	Percentage of Total (%)
Acceptance For MAC		
Yes	135	90.00%
No	15	10.00%
Acceptance for regional Anaesthesia		
Yes	125	83.33%
No	25	16.67%
Acceptance for General Anaesthesia		
Yes	110	73.33%
No	40	26.67%

Table 6: Resident responses on benefits and problems in accordance to various categories

Category	Number of Residents	Percentage of Total (%)
Benefits of allowing clear fluid 2 hrs prior		
decreases stress response	13	8.67%
less intraoperative hypotension	15	10.00%
improves patient comfort	46	30.67%
all of the above	76	50.67%
enhances postoperative recovery	1	0.67%
Benefit of limiting post operative fasting		
Yes	105	70.00%
Maybe	32	21.33%
No	13	8.67%
Problems related to over fasting		
Dehydration	60	40%
Irritability	32	21.33%
hypovolemia and hypoglycemia	33	22%
all of the above	25	16.67%

Table 7: Resident responses on other miscellaneous categories relating to duration of fasting

Category	Number of Residents	Percentage of Total (%)
Whether duration of fasting is different for different pathological conditions		
No	75	50%
Yes	75	50%
Fasting time according to guidelines inadequate for Indian patients		
No	96	64.00%
Yes	23	15.33%
Maybe	31	20.67%
Flexibility of altering the list of cases		

No	50	33.33%
Yes	68	45.33%
Maybe	32	21.33%
Not having control on scheduling cases		
No	39	26.00%
Yes	55	36.67%
Maybe	56	37.33%
High work load in institute		
Yes	63	42.00%
No	22	14.67%
Maybe	65	43.33%
Patients will not understand instructions properly		
No	48	32.00%
Yes	43	28.67%
Maybe	59	39.33%
Ward nursing staff doesn't follow instructions		
No	78	52.00%
Maybe	42	28.00%
Yes	30	20.00%
Differing fasting instructions by specialty residents and anaesthesia residents		
No	58	38.67%
Maybe	52	34.67%
Yes	40	26.67%

Discussion

Preoperative fasting refers to the period during which patients are prohibited from consuming solids or liquids before undergoing anaesthesia for surgery. This study aims to explore the knowledge, attitudes, and practices of postgraduate trainees in surgical specialties and anaesthesiology concerning preoperative fasting. Traditionally, patients have been instructed to remain nil by mouth starting from midnight. This longstanding practice primarily aimed to reduce the volume and acidity of gastric contents, thereby minimizing the risk of aspiration or regurgitation, conditions associated with Mendelson syndrome.

International preoperative fasting guidelines were initially established by the American Society of Anaesthesiologists (ASA) in 1999 and were most recently updated in 2017. According to these guidelines, the minimum fasting period is 6 hours for solids and 2 hours for clear fluids [1]. Many international guidelines now acknowledge the negative effects of prolonged fasting and advocate for more liberal practices to reduce insulin resistance, enhance patient well-being, and promote quicker postoperative recovery [2]. Despite these advancements, the practice of "NPO after midnight" remains common in many hospitals. Extended fasting periods can lead to adverse effects such as dehydration, electrolyte imbalances, hypoglycaemia, inappropriate stress responses, and increased postoperative nausea and vomiting [3].

In a study conducted in May 2020 by Nipun Gupta *et al.* [4] involving 166 consenting postgraduate trainees from anaesthesiology and surgical specialties, 71.33% of residents reported knowing the latest ASA guidelines for 6 to 8 hours of fasting for solids, while 40% were aware of the 2-hour fasting period for clear fluids in adults. Additionally, 56% were aware of the 2-hour guideline for clear fluids, 4% of the 4-hour fasting period for breast milk, and 48% knew of the 6-hour fasting recommendation for solids in paediatric patients. While 70% of residents advised 6 to 8 hours of fasting for solids in adults, only 29.33% correctly instructed 2 hours for clear fluids. In paediatric cases, only 13.33% gave appropriate instructions of 4 hours for breast milk and 2 hours for

clear fluids, while 38.67% continued to advise 6 hours of fasting for children.

In the same study, 50% of trainees stated that they learned about fasting guidelines from their seniors, 37% from standard textbooks, and 6% each from articles and other sources. According to Gupta *et al.* [4], 54% of respondents in their study also learned from seniors, followed by 25% from textbooks and smaller numbers from other sources and articles. While seniors serve as the primary source of practical knowledge, this approach risks passing on incomplete concepts and improper practices. In contrast, textbooks and high-quality journal articles offer more reliable information.

Regarding the communication of fasting instructions to patients, 42.67% of residents indicated that surgeons usually provided this information, while 9.33% said it was given by nursing staff, 8% by anaesthesiologists, and 40% said all groups were involved. In a study by Vibhore Rai *et al.* [5], 14.7% stated that anaesthesiologists, surgeons, and nursing staff collectively informed patients, with nursing staff mentioned most frequently at 26.1%. In another study by Pratibha Panjari *et al.* [6], 28% reported that nursing staff gave the instructions, 7% named surgeons, 13% cited anaesthesiologists, and 18% indicated all three groups were involved. An audit by Arun *et al.* [7] concluded that enhancing nurse education and improving coordination among anaesthesiologists, surgeons, and nursing staff could help reduce unnecessary preoperative fasting.

Monitoring of patients in the preoperative period was primarily done by staff nurses (46.43%), followed by resident doctors (30.36%), while 7.14% reported that no one monitored what the patient consumed. This highlights that inadequate monitoring may contribute to improper fasting compliance. Regarding anaesthesia practices, 90% of residents were willing to proceed under monitored anaesthesia care (MAC), 83.33% under regional anaesthesia, and 73.33% under general anaesthesia. Rai *et al.* [5] similarly reported that 73.9% accepted patients under MAC after clear fluids 2 hours prior, 89.1% for regional anaesthesia, and 68.1% for general anaesthesia.

Residents identified multiple benefits of allowing clear fluids 2 hours before surgery. Of them, 8.67% said it reduces stress response, 10% cited less intraoperative hypotension, 30% believed it improves patient comfort, and 0.67% mentioned enhanced postoperative recovery, while 50% acknowledged all of these benefits. In comparison, Panjari *et al.* [6] found that 81% of anaesthesiologists highlighted improved comfort, 35% decreased stress response, 32% reduced intraoperative hypotension, 23% enhanced recovery, and 7% supported all the benefits of allowing clear fluids 2 hours preoperatively.

Overall, 75% of residents in the study were aware of the benefits of limiting preoperative fasting. Gupta *et al.* [4] also found that 69% of trainees recognized these benefits, although actual implementation lagged behind. Only 40% of trainees accurately described clear fluid fasting guidelines, and just 29.33% applied them correctly in practice. Similar findings were observed in studies conducted in Lebanon and Sri Lanka, where awareness existed but practical implementation was limited [8,9].

Regarding patient concerns, 40% of residents cited dehydration as the most common problem due to prolonged fasting, followed by hypovolemia and hypoglycemia (22%), irritability and discomfort (21.33%), and 16.67% reported all of the above. Panjari *et al.* [6] found that over two-thirds of respondents acknowledged discomfort from extended fasting. Prolonged fasting is also linked to dehydration, hypotension, hypovolemia, electrolyte imbalances, metabolic stress, hypoglycemia, and insulin resistance [10,11].

Fifty percent of the residents believed that the duration of fasting should differ based on pathological conditions like diabetes or uremia, while the other half felt the guidelines should be uniform. When examining barriers to ASA guideline implementation, 45.33% believed it would lead to loss of flexibility in case scheduling, 36.67% thought it would reduce control over scheduling, and 42% cited high workload as a hindrance. Additionally, 32% stated that patients would not understand the instructions properly, 20% felt nursing staff did not follow instructions, and 26.67% noted inconsistencies between instructions from surgeons and anaesthesiologists. In a study by Rai *et al.*^[5], 76.9% of respondents cited lack of control over case scheduling as the primary reason for non-compliance, 43.3% mentioned high workload, and 30.3% believed patients would not understand instructions. Panjiar *et al.*^[6] found similar barriers: 54.8% cited case scheduling issues, 31.3% high workload, and 35.5% poor surgeon knowledge of the guidelines. Gupta *et al.*^[4] also noted that 49% of respondents were concerned about flexibility in scheduling and 52% reported inconsistent fasting instructions between anaesthesiologists and surgeons.

This study was limited to residents in anaesthesia, orthopaedics, ENT, OBGY, and general surgery in a metropolitan tertiary care setting. Nurses and other healthcare professionals were not included, nor were practitioners from peripheral or private hospitals. Consequently, the findings cannot be generalized nationwide. The relatively small sample size and the retrospective, memory-based reporting also limit the study's broader applicability.

Conclusion

Our study indicates that while most postgraduate residents are familiar with ASA fasting guidelines, their implementation and understanding of the benefits of limiting fasting periods are lacking. To address this, it is essential to establish comprehensive educational training programs aimed at enhancing the knowledge and awareness of postgraduate trainees, nurses, and medical staff regarding preoperative fasting guidelines and their advantages. Common obstacles to adherence include limited control over surgical scheduling, concerns about losing flexibility in case lists, heavy workloads, and inadequate knowledge among nurses and surgeons. Improving coordination, communication, and teamwork among surgeons, anaesthesiologists, and nursing staff is crucial for effective patient management. Implementing formal training on guidelines, developing standard fasting protocols, and adhering to them rigorously can help reduce unnecessary preoperative fasting and shift away from the traditional practice of overnight fasting before elective surgeries.

Declarations

Human subjects

Consent for treatment and open access publication was obtained or waived by all participants in this study. King Edward Memorial Hospital and Seth Gordhandas Sunderdas Medical College issued approval IEC/DISS/118/19. The IEC-II hereby approves the proposal entitled Protocol version no. 1.3 "A Study on Preoperative Fasting Among PG Trainees in Elective Surgeries".

Animal subjects

All authors have confirmed that this study did not involve animal subjects or tissue.

Conflicts of interest

None

Payment/services info

All authors have declared that no financial support was received from any organization for the submitted work.

Financial relationships

All authors have declared that they have no financial relationships at present or within the previous three years 9 of 10 with any organizations that might have an interest in the submitted work.

Other relationships

All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

- [1] American Society of Anaesthesiologists Committee. 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 Anaesthesiologists Committee on Standards and Practice Parameters. *Anesthesiology*. 2011 Mar;114(3):495-511.
- [2] 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 Anaesthesiologists Task Force on Preoperative Fasting and the Use of Pharmacologic Agents to Reduce the Risk of Pulmonary Aspiration. *Anesthesiology*. 2017 Mar;126(3):376-393.
- [3] Gunawardhana A. Knowledge, attitudes and practice of preoperative fasting guidelines in the National Hospital of Sri Lanka. *Sri Lankan J Anaesthesiol*. 2012;20(2).
- [4] Gupta N, Patnaik S, Lakkegowda LB, et al. Preoperative fasting: knowledge, attitude, and practice of postgraduate trainees at a tertiary care hospital – an observational study. *Ain-Shams J Anaesthesiol*. 2022;14:23.
- [5] Rai V, Islam MU. Assessment of knowledge, attitude and practices of preoperative fasting among anaesthesiologists of hospitals in Ghaziabad: a cross-sectional study. *Int J Sci Res*. 2020;9(2):1–3
- [6] Panjiar 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 May;63(5):350-355.
- [7] Arun BG, Korula G. Preoperative fasting in children: An audit and its implications in a tertiary care hospital. *J Anaesthesiol Clin Pharmacol*. 2013 Jan;29(1):88-91.
- [8] Dagher C, Tohme J, Bou Chebl R, Chalhoub V, Richa F, Abou Zeid H, Madi-Jebara S. Preoperative fasting: Assessment of the practices of Lebanese Anaesthesiologists. *Saudi J Anaesth*. 2019 Jul-Sep;13(3):184-190.



Published by AMMS Journal, this is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2025