Knowledge attitude and practice on preoperative fasting hour of post graduate surgical trainees at Tikur Anbesa Specialized Hospital (TASH), by Beza Mulat

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Knowledge attitude and practice on preoperative fasting hour of post graduate surgical trainees at Tikur Anbesa Specialized Hospital (TASH), Addis Ababa Ethiopia

By Beza mulat MD

Knowledge attitude and practice (KAP) on preoperative fasting hour of post graduate surgical trainees at TASH

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Study Period	From October 2023 to march 2024 G.C.
Project Area	Tikur Anbesa Specialized Hospital

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Table of Contents

List of tables

List of figures

Abbreviation and acronyms

ACCPM:	Anesthesiology, Critical Care and Pain Medicine
ASA:	American Society of Anesthesiologists
MD:	Medical Doctor
TASH:	Tikur Anbesa Specialized Hospital
NPO:	Nil per mouth
KAP:	Knowledge Attitude and Practice
PO:	Per Os
GOO:	Gastric Outlet Obstruction
Hr.:	hour
Ml:	milliliter
Kg:	kilogram
SBP;	systolic blood pressure
ANOVA	analysis of variance
OBGYN	obstetrics and gynecology
SPSS	Statistical package for social sciences
SD	standard deviation
MRI	magnetic resonance imaging
ERAS	enhanced recovery after surgery

Abstract

Background: Preoperative fasting time is the time period from the last meal received by the patient to the time of the initiation of the anesthetic procedure for different surgical procedures and procedural sedation. Since there is a risk of aspiration related morbidity and mortality in patient undergoing anesthesia, nill per os (NPO) status is taken very seriously. However, there is a paucity of data specifically examining the knowledge, attitudes, and practices of postgraduate surgical trainees regarding preoperative fasting guidelines within the Ethiopian context. This study will assess the knowledge, attitude and common practice of post graduate surgical trainees working at TASH (Tikur Anbesa Specialized Hospital)

Objective: the study is to assess pre-operative fasting hour knowledge, attitude and practice of post graduate surgical trainee at TASH.

Methods; an institutional-based descriptive survey study will be conducted from October 2023 to March 2024 G.C. TASH post-graduate surgical trainees in the year 2023 were included in the study. A total of 198 study participants were selected using stratified sampling method. Data was collected using questionnaire consisted of sections assessing knowledge, attitudes, and practices related to preoperative fasting. Data was analyzed using SPSS version 25. Descriptive statistics, ANOVA (analysis of variance), and independent t-tests were used for data analysis.

Result: a total of 196 participants included in the study. Significant knowledge gaps were found, with 66% of respondents rating their familiarity with preoperative fasting rules as good. However, there were knowledge gaps in areas such as knowing the hour child have last breast milk before surgery of the trainees, 58% reported having positive attitudes regarding restricting preoperative fasting. Regarding practices the majority 68.9% were classified as good practice. Although there were differences in how frequent they counseled patients about the benefits of fasting and duration relative to specific diet.

Conclusion: Among postgraduate surgical trainees at TASH, the study found that there were discrepancies in preoperative fasting knowledge, attitudes, and the practice. To increase adherence to preoperative fasting guidelines, it is advised to implement specialty-specific training, early integration of fasting education in residency, open communication, a focus on patient counseling, and frequent policy updates at the institution.

Key words: Pre-operative fasting, knowledge, attitude and practice, TASH

1. Introduction

1.1. Background

The rationale for preoperative fasting is to minimize gastric content, thereby lowering the risk of regurgitation and subsequent pulmonary aspiration. Pulmonary aspiration of gastric contents is a rare but potentially life-threatening complication. Of the aspiration events described in the 2021 ASA(American society of anesthesiologists) Closed Claims analysis of aspiration of gastric contents events, 57% of aspiration incidents resulted in death, and another 15% resulted in permanent severe injury (1).

Patients are traditionally kept nil per mouth (NPO) from midnight before their planned surgery, despite a lack of quality evidence to support this practice, Multiple meta-analyses have demonstrated that healthy adults undergoing elective surgery, oral intake of clear fluids up to 2 h and a light meal up to six hours before induction does not increase the risk of aspiration (2).

Societies of anesthesiologists have developed guidelines that the preoperative fasting protocol should have minimum fasting period of 2 h for clear fluids, 4 h for breast milk, 6 h for infant formula, nonhuman milk, and solid foods (2:4:6). Foods that contain fatty (meat) or fried foods require eight or more additional fasting hours Children's who have taken clear liquids and liquid enriched with carbohydrates till 2 hours before the procedure have less hunger and thirst, lower rates of dehydration, and better hemodynamic stability(3).

In normal adults, blood glucose level is maintained during fasting by reduced insulin secretion and increased secretion of glucose regulatory hormones, including growth hormone, glucagon, cortisol, and adrenalin. In contrast to adults, the hyperglycemic reaction in children is less effective, due to lower liver and muscle glycogen storage in children compare to adults, which leads to faster hypoglycemia and ketosis (4).

1.2. Statement of the problem

Preoperative fasting is a critical component of surgical care aimed at reducing the risk of aspiration and associated complications during anesthesia and surgical procedures(5). Despite the existence of evidence-based guidelines for preoperative fasting, previous studies (6,7) have reported suboptimal knowledge, attitudes, and practices among healthcare professionals, including surgeons and anesthesiologists. Poor adherence to recommended fasting protocols can compromise patient safety and lead to adverse outcomes(3).

Starving from midnight seems hardly apt any more given the clear evidence supporting the consumption of clear fluids up until 2 hours before surgery for patients not otherwise at risk of delayed gastric emptying and the current fasting guidelines have increasingly promoted more liberal advice to the consumption of fluids before surgery (8).

Preoperative oral consumption of complex carbohydrate, 2–3 hours before induction of anesthesia has been demonstrated to reduce the postoperative insulin resistance and to independently improve postoperative outcomes (9). Inadequate fasting can lead to pulmonary aspiration causing intraoperative hypoxia, requirement of prolonged ventilation, and ICU care (10).

Prolonged fasting on the other hand can cause hypoglycemia, dehydration, and hypovolemia, at the time of induction of anesthesia, especially in children and elderly patients (10). Despite the various guidelines, the practice of overnight fasting popularly known as “NPO after midnight” is the norm in most of the hospitals.(7).

Surgical trainees and medical students play a crucial role in ensuring the implementation of appropriate preoperative fasting practices, as they are often responsible for ordering fasting instructions and counseling patients(11). However, there is a paucity of data specifically examining the knowledge, attitudes, and practices of postgraduate surgical trainees regarding preoperative fasting guidelines within the Ethiopian context.

Therefore, this study is aimed to assess to assess the knowledge, attitude and practice on pre-operative fasting hour among post graduate surgical trainees at TASH

1.3. Significance of the study

Assessing the health care provider knowledge, attitude and current practice on pre-operative fasting hour will help to find out the gap from the standard practice; in terms of familiarity with updated recommendations on preoperative fasting, complication of over and under fasting, also by including clinical scenarios the study tries to identify trainees overall understanding and attitude.

After finalizing the result the study will propose possible interventions for the identified problems.

I believe the survey will motivate the hospital quality improvement personals to choose the topic as a project to work on so as to decrease patient discomfort and complication associated with poor adherence to research based guidelines and protocols.

2. Literature review

2.1. Definition

Preoperative fasting is a prescribed time frame before a procedure when patients are restricted from oral intake of liquids or solids.(3)

2.2. Recommended fasting hour based on the content of diet

2.2.1 Carbohydrate containing clear liquids

We recommend healthy adults drink carbohydrate-containing clear liquids until 2 h before elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation. The carbohydrates may be simple or complex.

- Strength of recommendation: Strong
- Strength of evidence: Moderate Up to 400 ml of clear liquids is considered an appropriate volume. (1)

Healthy children encouraged to drink clear liquids of 3ml.Kg-1.hr-1 up to 1 hour before anesthesia. 'Clear liquids' include water, carbohydrate-rich clear liquids, pulp-free clear fruit juice, clear cordial, green tea, black tea and black coffee. The carbohydrates may be simple or complex. It excludes fluids containing milk, particulate matter, soluble fiber or jelly.(16)

2.2.2 Protein containing clear liquids

All protein-containing clear liquids also contained carbohydrates. Patients drinking protein-containing clear liquids until 2 h before their procedures experienced less hunger compared to fasting and less hunger and thirst compared to drinking other clear liquids. There was no incidence of aspiration in any group. No differences in the occurrence of regurgitation were detected.(1)

With emerging evidence of the safety of liberalizing clear fluid ingestion to either 1h or up to the time of anesthesia, fasting times can be reduced even further. In a review of 10 015 children allowed un- limited intake of clear fluids up to the time of general anesthesia, Andersson et al.19 found the incidence of pulmonary aspiration to be 0.03% with an average fasting time of 1.7h.(17)

2.2.3 Recommendations for Solids and Nonhuman Milk

A light meal or nonhuman milk may be ingested for up to 6 h before elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation and analgesia. Additional fasting time (e.g., 8 or more hours) may be needed in cases of patient intake of fried foods, fatty foods, or meat.(12)

Enteral feeds should generally be continued in intubated intensive care patients until procedural transfer unless airway, thoracic or abdominal procedures are to be performed in which case they should be ceased for 6 hours. (non-human) milk may be encouraged until 4 hours (16)

2.2.4 Recommendations for Breast Milk

Breast milk may be ingested for up to 4 h before elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation and analgesia. (12)

For infants under 6 months of age: Breast milk feeding should be encouraged until 3 hours formula Prescribed medications may be taken, with a sip (30ml for an adult) of water up to 20 minutes prior to anesthesia. The 30 ml includes the volume required for any other liquid medications such as sodium citrate (16)

2.2.5 Preoperative Fasting of Infant Formula

The literature is insufficient to evaluate the effect of timing of the ingestion of infant formula on the perioperative incidence of pulmonary aspiration, gastric volume, pH or emesis/reflux. Both the consultants and ASA members agree that for neonates and infants, fasting from the intake of infant formula for 6 or more hours before elective procedures

requiring general anesthesia, regional anesthesia, or procedural sedation and analgesia should be maintained.(12)

2.2.6 Recommendation for chewing gum

We suggest not delaying elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation in healthy adults who are chewing gum.

Strength of evidence: Very low Chewing gum should be removed before any sedative/ anesthetic is administered (12)

2.2.7 Recommendations for Gastrointestinal Stimulants

Gastrointestinal stimulants may be preoperatively administered to patients at increased risk of pulmonary aspiration. Do not routinely administer preoperative gastrointestinal stimulants for the purpose of reducing the risk of pulmonary aspiration in patients with no apparent increased risk for pulmonary aspiration.(12)

2.3 Association between fasting intervals and residual gastric contents

The rationale for preoperative fasting is to ensure that the patient arrives in the operating theatre with an empty stomach. Recent research has demonstrated that even a 2 h fasting interval for fluids does not guarantee an empty stomach. On the contrary, there seems to be a considerable inter-individual variation, whilst most children had only small amounts of residual gastric content, some children had up to 90 ml of gastric fluid after either 1 or 2 h of fasting. In fact, in the latter and other studies, there was no obvious correlation between fasting interval and intragastric volume. Furthermore, in an MRI(magnetic resonance imaging) study of gastric contents after a light meal ingested 4 or 6 h, there was no difference in intragastric volume.(4)

A meta-analysis of RCTs(random control trial) reports a lower risk of aspiration (i.e., gastric volume < 25 mL and pH > 2.5) when clear liquids are given 2 to 4 h before a procedure Ingested volumes of clear liquids range from 100 ml to unrestricted amounts for adults, and 2 ml/kg to unrestricted amounts for children (Category A1-B evidence)(12).in other hand some data's suggests that the critical volume for acid aspiration can be increased to at least 50 ml of pH 1 (0.8 ml kg"1). Such a change reduces considerably the

percentage of patients deemed to be at risk from aspiration and would allow clinicians to place less emphasis on attempts to reach small, often unobtainable, residual gastric volumes. We wish to emphasize, however, that every effort must still be made to ensure that acidic gastric contents are neutralized.(18)

A recent meta-analysis showed that implementation of the ERAS (enhanced recovery after surgery) protocol led to a reduction in postoperative recovery time, duration of stay, and reduction in complications by 30%–50%. A complex carbohydrate (polysaccharide, maltodextrin) drink, 400 ml with 50 g CHO (12 g/100 ml), osmolality o 300mOsm/kg, is reliably emptied from the stomach within 2 h and elicits the intended insulin release to change metabolism from a fasted to a fed state (2)

2.4 Complication associated with prolonged preoperative fasting

To mention some of the complication associated with prolonged fasting times; can result in ketoacidosis with (low) normal glucose concentrations in children younger than 36 months. this is more pronounced if the fasting time exceeds the guideline by more than 2 h.(13). The other one will be patients stated that they felt discomfort during the preoperative period and factors contributing to discomfort were thirst (58.1%), hunger (49%), mouth dryness (49%), lengthy wait prior surgery (16.4%), headache (22%) and 38.6% feel tired. (14). Last but not least the findings of the current study revealed that longer fasting duration for liquids was associated with reduced SBP(systolic blood pressure), while the SBP remained within the normal range. Although this correlation was statistically significant, the observed values were not of clinical significance(15)

Despite the extensive knowledge base developed and the dissemination of society guidelines based upon the published science, literature suggests that adoption into clinical practice has been irregular.(8)

2.5 previous studies on knowledge attitude and practice of preoperative fasting

Prospective, observational study was conducted in a tertiary care, 2400 bedded teaching hospital in Southern India, A total of 68 surgeons were recruited for the study. This study shows an overall decrease in knowledge about preoperative fasting guidelines among surgeons. The level of knowledge of preoperative fasting guidelines and complications was higher among surgeons who operate only on children as compared to surgeons operating only on adults and both children and adults (mixed) . All the surgeons uniformly agreed to the question that patients should be kept fasting for elective surgery but only 51.47% of them felt that fasting hours for regional and general anesthesia should be the same. Improper implementation of preoperative fasting orders can be due to lack of awareness about fasting guidelines among medical personnel involved in the perioperative care of patients(10)

Observational Study was conducted to evaluate the knowledge, attitude, and practice of postgraduate trainees of surgical specialties and anesthesiology regarding preoperative fasting at a tertiary care hospital in India May 2020. Consenting 166 postgraduate trainees of anesthesiology and surgical specialties was asked to respond to a questionnaire consisting of nine questions. Out of 166 respondents, 149 (89.8%) and 94 (56.6%) respondents could not correctly describe the practice guidelines published by the American Society of Anesthesiology pertaining to preoperative fasting in adult and pediatric patients respectively. Of the total respondents, 146 (87.9%) and 108 (65.1%) gave incorrect preoperative fasting instructions to adult and pediatric patients, respectively. Fifty-one (30.7%) respondents were unaware of the benefits of limiting preoperative fasting.(7)

3 Objectives of the Study

3.2 General Objective

The general objective of the study is to assess the knowledge, attitude and practice on pre-operative fasting hour of post graduate surgical trainees at TASH

3.3 Specific objectives

- Assessment of the knowledge of practitioners about preoperative fasting recommendations
- To identify trainees familiarity with complication associated with over and under fasting
- Assessment of attitude of practitioners about preoperative fasting guidelines and protocols
- To analyze post graduate surgical trainees current preoperative fasting practice

4 Methods and materials

4.2 Study Area and Period

The study was conducted at Tikur Anbesa specialized hospital which is the largest teaching hospital in Addis Ababa, Ethiopia.

The Federal Ministry of Health transferred Tikur Anbessa Specialized Hospital (TASH), the country's largest referral hospital with 700 beds, to the School in 1998 and it has since become a University teaching hospital. TASH has been the primary teaching hospital for most specialties' clinical and preclinical training. It's also a place where the entire country can get specialized clinical services that aren't offered in other public or private institutions. TASH has about 200 physicians, 379 nurses, and 115 other health professionals on staff to provide medical care. In the hospital, patients are cared for by several departments, faculties, and residents undergoing specialty training at the School of Medicine. In addition, the School of Medicine is linked with practically all regional and federal hospitals in Addis Ababa as clinical services and training locations. There are 15 anesthesiology critical care and pain medicine consultants and about 85 anesthesiology critical care and pain medicine residents. About 7000 elective surgical procedures are being done annually in the hospital.

The study was conducted from October, 2023 to march, 2024.

4.3 Study Design

An institutional-based descriptive survey study

4.4 Population

4.4.1 Source Population

- ✓ All TASH post graduate trainees in the year 2023 were source population

4.4.2 Study population

- ✓ All TASH post-graduate surgical trainees in the year 2023 were the study population.

4.5 Eligibility criteria

4.5.1 Inclusion Criteria

- ✓ Post-graduate surgical and related field trainees working at TASH in the year 2023

4.5.2 Exclusion criteria

- ✓ Trainees that are not currently enrolled in post graduate specialty resident ship program

4.6 Sampling Size Estimation

The sample size is determined by taking the following assumption: since there is no previous study in the area I assumed the proportion as 50%, confidence interval of 95% and margin of error to be tolerated 0.05. The sample size taken for the study was determined using a single population formula;

$$n = \frac{z^2 \times p(1-p)}{d^2},$$

Where, n= sample size, z= standard normal variant at 5% type I error which is 1.96, p= expected proportion in population (taken to be 50% since no previous study) and d=absolute error in precision which is taken to be 5%. So using the above formula and values

$\text{smple size} = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2}$ =384, since the sample size is < 10,000the correction formula is used to get the final sample size using

$$nf = \frac{ni}{1+(\frac{ni-1}{N})}$$

Where nf= final sample size, ni= initial sample size and N= the estimated number of post graduate surgical trainees during the study period which is estimated to be 300. So using the above formula it is 168. Adding 10% non-respondent the final sample size was **198**.

4.7 Sampling Technique

In this study to pick study participants from the postgraduate surgical trainee population at TASH, a proportionate stratified random sampling approach was used. Initially, the trainees were divided into groups according to their specialization (general surgery, orthopedics, neurosurgery, etc.). Next, based on the size of the trainee population in each specialty, the 198-person total sample size was proportionately distributed to each stratum.

A straightforward random selection method was used within each stratum to pick the necessary number of participants at random from the related specialized trainee list.

4.8 Study variables

4.8.1 Dependent variables

- Knowledge on preoperative fasting
- Attitude on preoperative fasting
- Preoperative fasting practice

4.8.2 Independent variables

- The department of surgical specialty
- Year of residence
- Previous training ,seminar or other related exposure on the research topic

4.9 Operational definition

Preoperative fasting: a prescribed time frame before a procedure when patients are restricted from oral intake of liquids or solids

Health care provider: professionals involved on the management of the patient starting from ward admission to discharge. (Surgeons, Anesthesiologists, Fellows, Residents, Interns and Nurses)

Good Knowledge: the knowledge level of participants, the respondent correctly answered greater than mean score of the total score included in the study questionnaire.

Favorable (positive) attitude: if the respondent total score is greater than mean score, the respondents will be categorized as having positive (favorable) attitude. Moreover, increasing the mean score of attitude also indicate having positive attitude.

Good practice: practice level of participant, if the total score of the respondent is above mean score, it will be categorized under good practices.

4.10 Data Collection Procedure, tool and measurements

After receiving informed consent, the data will be collected using a pretested standardized questionnaire. The questionnaire is written in English, and data will be gathered by anesthesiology residents and interns, who will be overseen by the primary investigator. The questionnaire has four sections and it is formulated after an extensive literature search.

Section 1: General Information: This section will collect demographic information such as age, sex, year of residency, area of specialty and having previous training, seminar or related exposure related to topic of interest or not.

Section 2: Understanding Fasting before Surgery, There will be fifteen multiple-choice questions in this section aimed at evaluating the respondents' familiarity with preoperative fasting rules. The total number of accurate answers to the 15 multiple-choice questions will be used to determine the knowledge score. Every right response will be assigned a code of "1," while any wrong or absent answers will be assigned a code of "0." Higher scores indicate a greater understanding of the preoperative fasting rules. The overall knowledge score will vary from 0 to 15.

Section 3: attitude of the respondents measured using a 5-point Likert scale that goes from "strongly disagree" (1) to "strongly agree" (5), ten series questions were asked in this section to assess respondents' opinions regarding preoperative fasting . A more positive attitude toward preoperative fasting practices was indicated by higher attitude scores, which were determined by adding the replies to the 10 Likert-scale statements.

Section 4: Practices for preoperative fasting: Five series questions were used to evaluate the respondents' preoperative fasting behaviors. Using a 4-point Likert scale, respondents assessed their practices as "seldom" (1-25%), "sometimes" (26-50%), "often" (51-75%), and "routinely" (76-100%). Higher scores indicated better adherence to advised preoperative fasting practices. Then, it was computed by adding together the answers to the five Likert-scale questions.

4.11 Data Processing and Analysis

The collected data will be reviewed by the main investigator, and documents will be cleaned, checked for quality prior to data input, and manually analyzed using SPSS software version 25. Simple frequencies and proportions will be used in the descriptive analysis, and the findings will be displayed in tables, bar graphs, and pie charts. Additionally, the knowledge, attitude, and practice scores can be categorized into "good" and "poor" levels based on predetermined cut-off points or mean values for further analysis and comparison.

To assess the difference in mean score of knowledge, mean score of attitude and mean score of practices among areas of specialty(variable with more than two categories) and year of residence (variable with more than two categories), one-way ANOVA was used. While to evaluate the difference between having previous training, the variable with only two categories (yes vs No), independent t-test was used. A p-value less than 0.05 were considered as a cutoff point to declare statistical significant difference between the groups.

4.12 Ethical issue

Ethical clearance and support letter was obtained from Addis Ababa University College of Health Science department of Anesthesiology, Critical Care and Pain Medicine and submitted to Tikur Anbessa Comprehensive Specialized Hospital Chief Clinical and Academic Director Offices.

5 Result and discussion

5.2 General information

Out of 198 participants, 196 returned their responses, with a response rate of 98.9%. Majority 137(69.9%) were male, and the mean age of the study participants was 32.97 years (SD ± 2.102). Regarding residency year, the highest proportion 75(38.3%) were in year 1, followed by year 2 (31.6%), and 11(5.6%) were in year 5. The respondents represented a variety of specialties, with general surgery making up the largest group (26%), followed by Gyn/Oby surgery (23%).

Table 1: General information, TASH post graduate trainees in the year 2023.

Variables	**Frequency**	**Percentage**
Sex		
Male	137	69.9
Female	59	30.1
Age	Mean: 32.97 ; SD ±2.102	
Year of residency		
year 1	75	38.3
year 2	62	31.6
year 3	28	14.3
year 4	20	10.2
year 5	11	5.6
Area of specialty		
ENT surgery	12	6.1
OBGYN	45	23.0
General surgery	51	26.0
Neurosurgery	22	11.2
Orthopedics	36	18.4
Pediatrics surgery	10	5.1
Urology surgery	20	10.2

5.3 Have previous training on the preoperative fasting

Out of the total study participants, only 27 (13.8%) had previous training on preoperative fasting while majority 169(86.2%) had not.

Figure 1: Training on preoperative fasting, TASH post graduate trainees in the year 2023.

Out of the 27 trainers that received training, 14 (51.8%) were from general surgery, followed by 4 (14.81%) from Pediatric surgery, and a minor fraction from orthopedics surgery and neuro surgery, each with one (3.7%). Urology received no training.

Figure 2: Training by specialty, TASH post graduate trainees in the year 2023.

5.4 Knowledge on preoperative fasting

Knowledge on preoperative fasting among postgraduate surgical trainees was presented considering the right answer from the respondents as yes and all other as no. then mean score and standard deviation was evaluated. Based on the data,. Respondents had clear understanding about the problem and complications of under fasting with highest mean score (Mean=0.99), followed by the benefits of limiting preoperative fasting (Mean=0.97).

However, there were knowledge gaps in areas such as knowing the hour a three month old child have last breast milk before surgery (Mean=0.168), and know a time for two year old child have last cow's milk before surgery (Mean = 0.153) and know the time after the last meal be the same for a two day and ten year old child (Mean=0.295). The findings highlight the need for continued education and clear communication of evidence-based preoperative fasting protocols to ensure patient safety and optimal outcomes mostly regarding protocol for pediatrics.

Table 2: Knowledge on preoperative fasting, TASH post graduate trainees in the year 2023.

Knowledge on preoperative fasting	**Mean**	**Std. Deviation**
Know which is clear fluids and which is not clear fluids	.7551	.43113
Know the hour a three month old child have last breast milk before surgery	.1684	.37515
know the time after the last meal be the same for a two day and ten year old child	.2959	.45762
know a time for two year old child have last cow's milk before surgery	.1531	.36097
know the problem of under fasting	.9898	.10076
know the complication of over fasting	.7398	.43987
know the fasting order for solid food for a 65 year old diabetic for the last 30 years scheduled for elective cholecystectomy	.6888	.46418
Know when is the time to discontinued NG tube feeding for a 34 year old man who underwent Whipple's procedure, scheduled for fasiotomy	.2092	.40777
Know that compared to general anesthesia ,fasting hour prior to regional anesthesia is same	.7449	.43703
know that compared to general anesthesia, fasting prior to procedural sedation is same	.8520	.35597
know that for a patients on NG tube feeds posted for surgery, the duration of fasting is same as patients on oral feeds	.4031	.49177
know that children should be encouraged to drink 3 ml per KG clear fluid 1Hr prior to general anesthesia	.2857	.45291
Able to describe NPO status for regional anesthesia	.8622	.34553
know the benefit of limiting preoperative fasting on patient outcome	.9745	.15807
Know that under no circumstance we should keep the practice of NPO after midnight	.4439	.49811

The level of overall knowledge is computed and classified based on the mean score into good and poor knowledge, with those scoring below the mean score which is 0.5711 SD 0.16934 classified as poor and those scoring above the mean as having good knowledge. According to the findings, roughly one-third 129(66%) of the respondents had good knowledge, while 67 (34%) had poor understanding.

Figure 3: Overall, level of knowledge, TASH post graduate trainees in the year 2023.

5.4.1 Knowledge Difference between Specialty

A one-way ANOVA was performed to compare the difference in mean score of knowledge by area of specialty. Based on the analysis, there is a significant difference in preoperative fasting knowledge score across postgraduate surgical trainees from different disciplines was observed ($F(6,195)=2.445$; $P<0.027$). Thus, pediatric surgery trainees had the greatest mean knowledge score (0.74), whereas Oby/Gyn surgery trainees had the lowest score (0.534), indicting there is a disparity in knowledge among different specialties.

Table 3: ANOVA table shows mean score Knowledge Difference between Specialties, TASH, 2023.

ANOVA					
Mean score of Knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.403	6	.067	2.445	.027
Within Groups	5.189	189	.027		
Total	5.592	195			

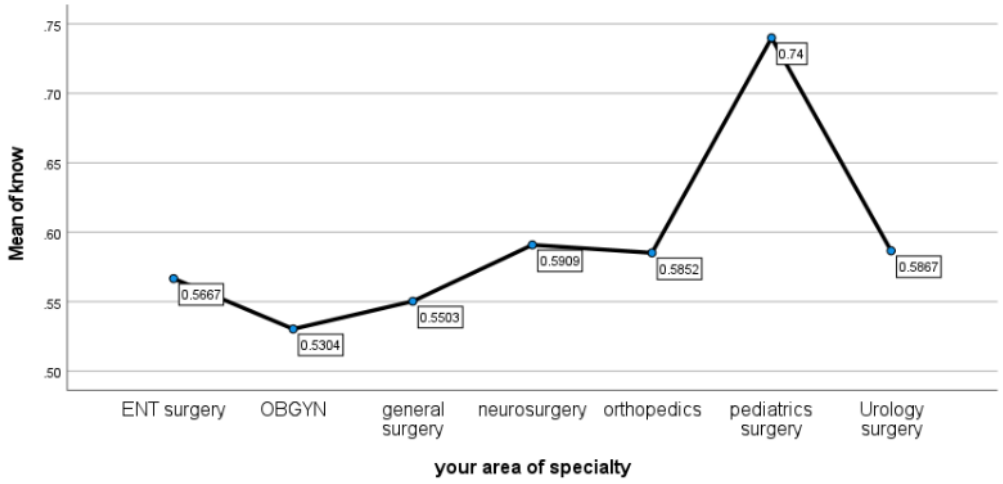

Figure 4: Plot shows mean score Knowledge Difference between Specialties, TASH, 2023.

5.4.2 Knowledge Difference Between year of residence

One-way ANOVA was performed to compare the difference in knowledge scores between years of residency. The research found substantial differences across years of training (Df(4,195); F-statistics=6.025, P<0.001). Thus, trainers in their first-year residents had the lowest mean knowledge score of 0.518. And residents in their fifth year had a higher mean score (0.703). Thus, the graph shows steady increase of knowledge as age increases.

Table 4: ANOVA table shows mean score Knowledge Difference Between year of residency, TASH, 2023.

ANOVA					
Knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.627	4	.157	6.025	.000
Within Groups	4.965	191	.026		
Total	5.592	195			

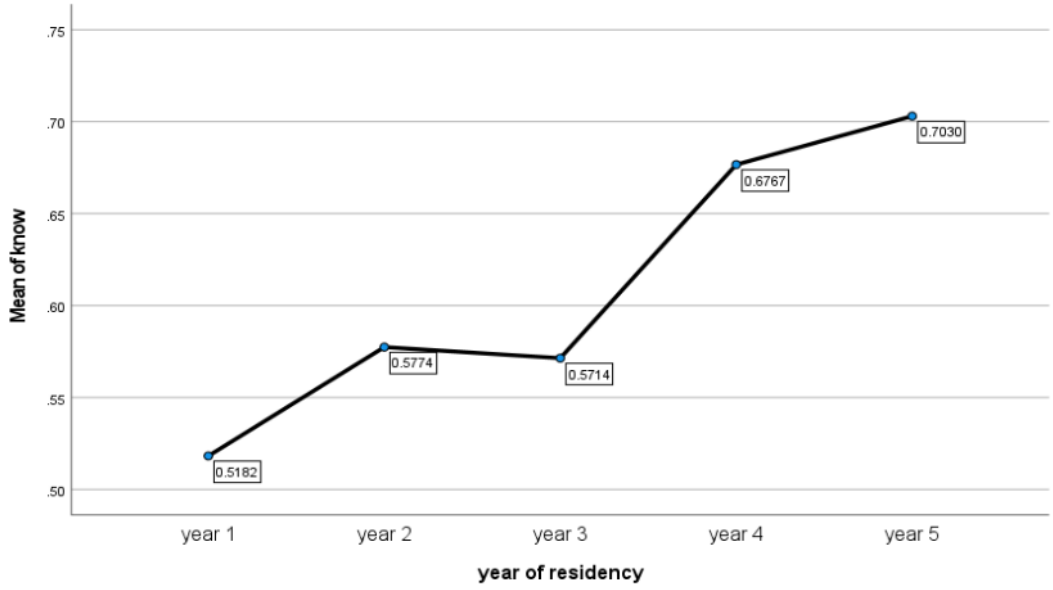

Figure 5: Plot shows mean score Knowledge Difference Between year of residency, TASH, 2023.

5.4.3 Knowledge differences in previous training status

To evaluate whether there is a difference in knowledge between trainees who had training or not, independent t test was conducted. Based on the t-test there is a statistically significant difference in mean knowledge scores between those who received previous training and those who did not. Trainees who had previous training obtained higher mean knowledge scores than those without prior instruction. The mean difference in knowledge score between the group was around 0.118 (P=0.013) when Equal variances not assumed, with those who had prior training scoring nearly 12% higher on average. This finding indicate that having training or exposure on the subject of interest increases knowledge and understanding.

Table 5: Group statistics shows mean score Knowledge Difference Between trainee have training and not, TASH, 2023.

Group Statistics					
	Have previous training on preoperative fasting	N	Mean	Std. Deviation	Std. Error Mean
Mean Knowledge	No	169	.5558	.15751	.01212
	Yes	27	.6667	.20919	.04026

Table 6:T-test shows mean score Knowledge Difference Between trainee have training and not, TASH, 2023.

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Knowledge	Equal variances assumed	9.126	.003	-3.234	194	.001	-.11085	.03427	-.17845
	Equal variances not assumed			-2.637	30.884	.013	-.11085	.04204	-.19661

5.5 Attitude on preoperative fasting

Based on the following table, majority (93.4%) agreed or strongly agreed that limiting perioperative fasting has benefits for patient outcomes. However, there were more mixed attitude on continuing the practice of keeping patients NPO (nil per os/nothing by mouth) after midnight, with 41.8% strongly disagreeing and 32.7% unsure about this approach. Regarding the attitude that patients with gastric outlet obstruction are at risk of aspiration even after adequate fasting prior to anesthesia, with 84.2% agreeing or strongly agreeing with this statement. Keeping patients NPO for both regional anesthesia (92.4% agree/strongly agree) and procedural sedation (94.4% agree/strongly agree) were also widely endorsed practices.

On the other hand, more than one-third (77%) disagreed/strongly disagreed that there was no need to limit fluid intake before regional anesthesia. Similarly, 85.7% disagreed or strongly disagreed that pediatric patients do not need to fast prior to procedural sedation.

The majority of trainees (71.9%) strongly agreed that patients should be educated on the length and benefits of preoperative fasting. There was no clear majority opinion on the necessity for distinct NPO guidelines for geriatric patients.

Table 7: Attitude on preoperative fasting, TASH post graduate trainees in the year 2023.

Attitude on preoperative fasting	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Limiting perioperative fasting has benefit on patient outcome	9 (4.6%)	2 (1.0%)	2 (1.0%)	45 (23.0%)	138 (70.4%)
Practice of NPO after midnight should be continued	82 (41.8%)	30 (15.3%)	64 (32.7%)	15 (7.7%)	5 (2.6%)
Patients with GOO even after adequate fasting are at risk of aspiration under anesthesia	24 (12.2%)	0 (0.0%)	7 (3.6%)	69 (35.2%)	96 (49.0%)
Patients should be kept NPO for regional anesthesia	10 (5.1%)	0 (0.0%)	5 (2.6%)	103 (52.6%)	78 (39.8%)
Patients should be kept NPO for procedural sedation	6 (3.1%)	0 (0.0%)	5 (2.6%)	105 (53.6%)	80 (40.8%)
There is no need to limit the amount of fluid a patient can drink before regional anesthesia	73 (37.2%)	78 (39.8%)	27 (13.8%)	17 (8.7%)	1 (0.5%)
Pediatric patients do not need to fast prior to procedural sedation	78 (39.8%)	90 (45.9%)	21 (10.7%)	6 (3.1%)	1 (0.5%)
Patients need to be counseled about duration and advantage of fasting before the procedure	24 (12.2%)	29 (14.8%)	2 (1.0%)	0 (0.0%)	141 (71.9%)
Patients need to avoid taking morning dose of PO medications because it affects fasting	81 (41.3%)	35 (17.9%)	55 (28.1%)	21 (10.7%)	4 (2.0%)
For geriatric patients, NPO hours should be different from the general adult population	64 (32.7%)	42 (21.4%)	60 (30.6%)	27 (13.8%)	3 (1.5%)

Overall Attitude on preoperative fasting is categorized based on mean value score of the questions which is 3.1500 SD 0.52374, based on the categories, majority 113(58%) had positive attitude, while 42% had unfavorable attitude toward preoperative fasting recommendations.

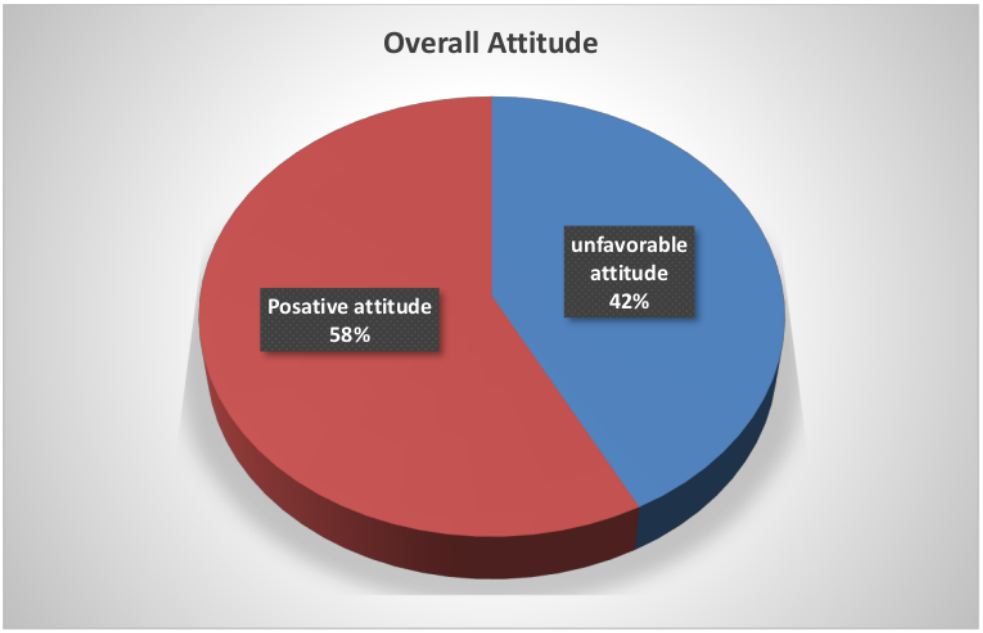

Figure 6: Overall attitude status, TASH post graduate trainees in the year 2023.

5.5.1 Attitude Difference between Specialty

There was no significant difference in attitude between specialty based on one-way ANOVA (df (6,195); P=0.091). However, based on their mean value, Trainees in ENT surgery had lowest mean attitude scores (2.775) than their peers in other professions. General surgery and Urology received the highest mean scores, indicating a good attitude toward preoperative fasting.

Table 8: ANOVA table shows mean score attitude Difference between Specialties, TASH, 2023.

ANOVA					
Attitude					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.968	6	.495	1.851	.091
Within Groups	50.522	189	.267		
Total	53.490	195			

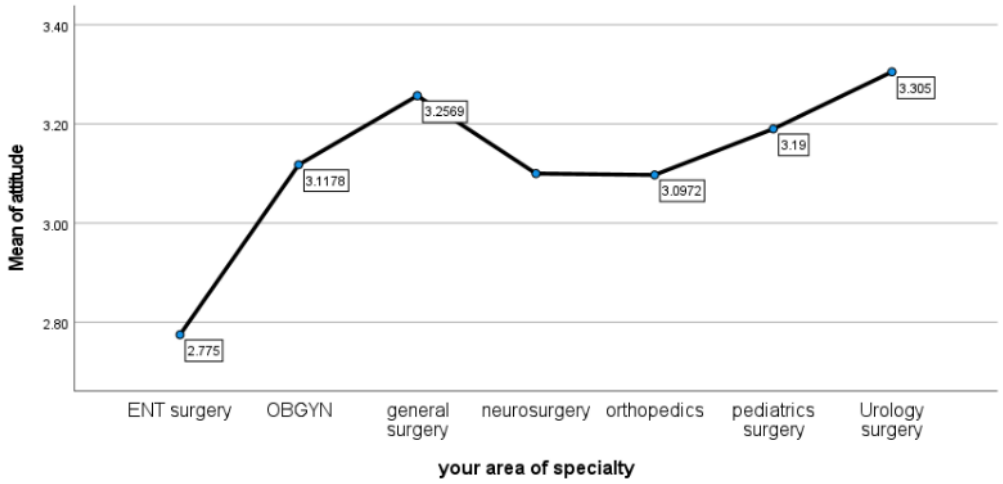

Figure 7: Plot shows difference in mean score attitude between Specialties, TASH, 2023.

5.5.2 Attitude mean score Difference Between years

Based on the ANOVA, the difference in mean score of attitude between years of residency is not significant. Even though trainees at their fourth and fifth year of training had highest mean score, the difference is not statistically significant (F(4,195)=1.008; (P=0.405).

Table 9: ANOVA table shows mean score attitude between years of residency, TASH, 2023.

ANOVA					
attitude					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.106	4	.276	1.008	.405
Within Groups	52.384	191	.274		
Total	53.490	195			

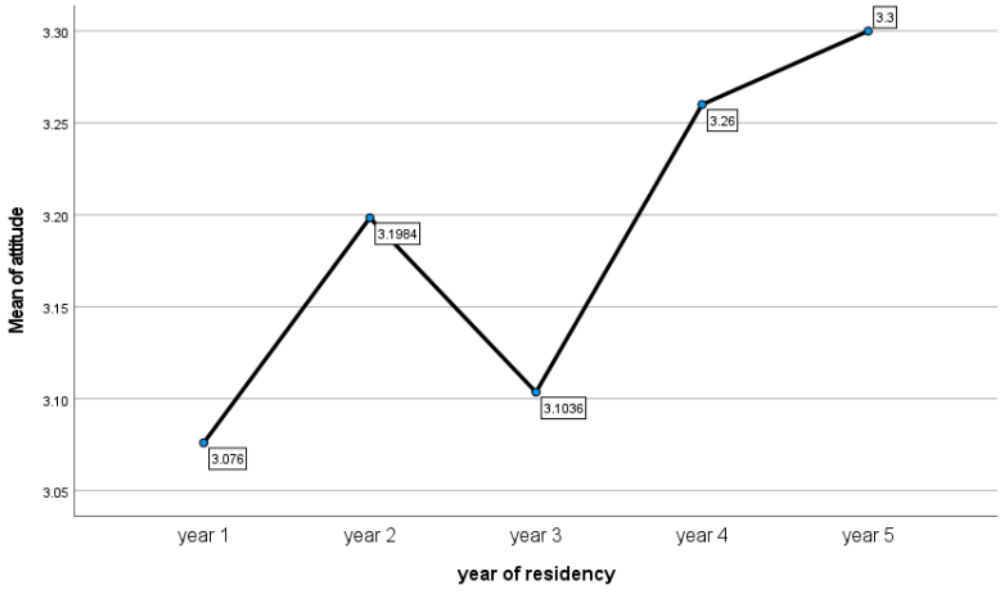

Figure 8: Plot shows difference in mean score of attitude between years of residency, TASH, 2023.

5.6 Preoperative fasting practice

The majority 184 (93.9%) of postgraduate surgical trainees report issuing fasting orders to patients scheduled for elective surgery. Nearly half (44.6%) of them offer fasting instructions frequently (51-75% of the time), and more than one-third (36.4%) give them on a regular basis (76-100%).

In terms of counseling patients about the benefits of fasting, nearly half (47.3%) occasionally counsel patients (26-50% of the time), whereas 73 (39.7%) frequently counsel patients (51-75% of the time). Approximately 12 (6.5%) counsel patients on a regular basis, while another 12 (6.5%) do so seldom.

Similarly, trainees vary in how they counsel patients on fasting length. 85(46.2%) provide this counseling occasionally, followed by 80(43.5%) who do it frequently, and 12(6.5%) who do it on a regular basis.

In terms of proposing diet types in relation to duration of fasting to patients, more than half (53.3%) frequently provide this information, while 24 (13.0%) describe it on a routine basis. However, nearly one-fourth (23.4%) only seldom provide these rules, while 19 (10.3%) rarely expand the information.

Table 10: Preoperative fasting practice, TASH post graduate trainees in the year 2023.

Preoperative fasting practice of post graduate surgical trainees	**Frequency**	**Percentage**
Have you ever give fasting order for patients scheduled for elective surgery		
No	12	6.1
Yes	184	93.9
If the answer is yes for above question, how frequent you give fasting order		
Seldom (1-25%)	6	3.3
Sometimes (26-50%)	29	15.8
Often (51-75%)	82	44.6
Routinely (76-100%)	67	36.4
Do you council patients about the advantage of fasting		
Seldom (1-25%)	12	6.5
Sometimes (26-50%)	87	47.3
Often (51-75%)	73	39.7
Routinely (76-100%)	12	6.5
Do you council patients about the disadvantage of prolonged fasting		
Seldom (1-25%)	7	3.8
Sometimes (26-50%)	85	46.2
Often (51-75%)	80	43.5
Routinely (76-100%)	12	6.5
Do describe for patients the type of meal and the recommended		

fasting hour		
Seldom (1-25%)	19	10.3
Sometimes (26-50%)	43	23.4
Often (51-75%)	98	53.3
Routinely (76-100%)	24	13.0

Overall practice of postgraduate surgical trainees evaluated in terms of giving proper type of fasting orders for patients. using the mean value as a cut-off point which is 2.5395 SD 0.88544. The majority, 135(68.9%) were classified as good practice, while 61(31.1%) were categorized as having poor practice.

Figure 9: Overall practice, TASH post graduate trainees in the year 2023.

5.6.1 Preoperative fasting practice difference in specialty

The one-way ANOVA analysis revealed a significant difference in practice between specialties ($F(7,195)=3.084$; $P = 0.004$). According to the statistics, pediatric surgery (mean=2.95), and urology trainees (mean=2.86), had the highest practice mean scores, indicating better practices. However, trainees in the OBYGYN and ENT specialties had lower practice mean scores.

Table 11: ANOVA table shows mean score practice Difference between Specialties, TASH, 2023.

ANOVA					
Practices					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.746	7	2.249	3.084	.004
Within Groups	137.135	188	.729		
Total	152.881	195			

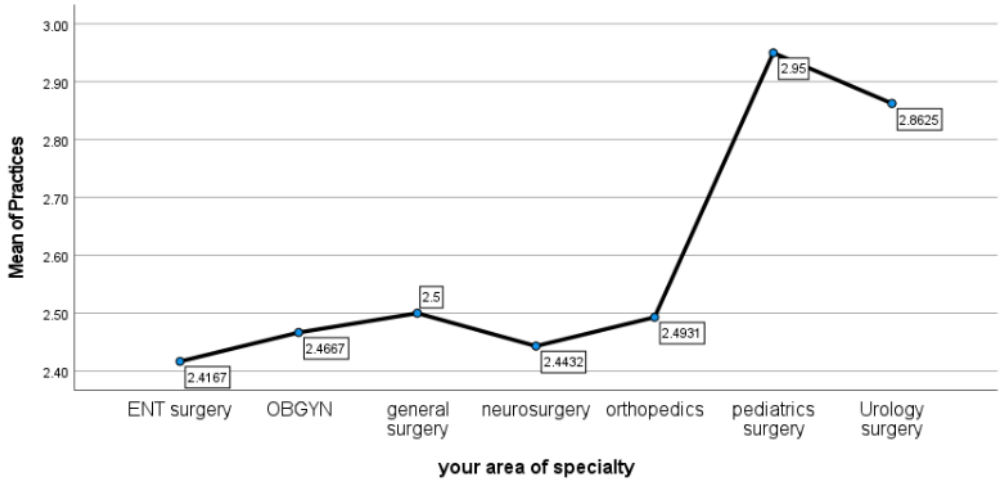

Figure 10: Plot shows mean score practices Difference between Specialties, TASH, 2023.

5.6.2 Preoperative fasting practice difference in year of residence

To assess the difference in year of specialization, an ANOVA was performed, which revealed a significant difference between year of residency and practice of pre-operations fasting ($F(4,195)=3.525$; $P=0.008$). The results show that there was a greater increase in

practice with each year of residency, with the fourth-year trainer having the highest practice mean score (M=3.03). However, the mean score of a fifth-year trainer was lower than that of a fourth-year trainer, at 2.84.

Table 12: ANOVA table shows mean score practices Difference Between year of specialty, TASH, 2023.

ANOVA					
Practices					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.510	4	2.627	3.525	.008
Within Groups	142.371	191	.745		
Total	152.881	195			

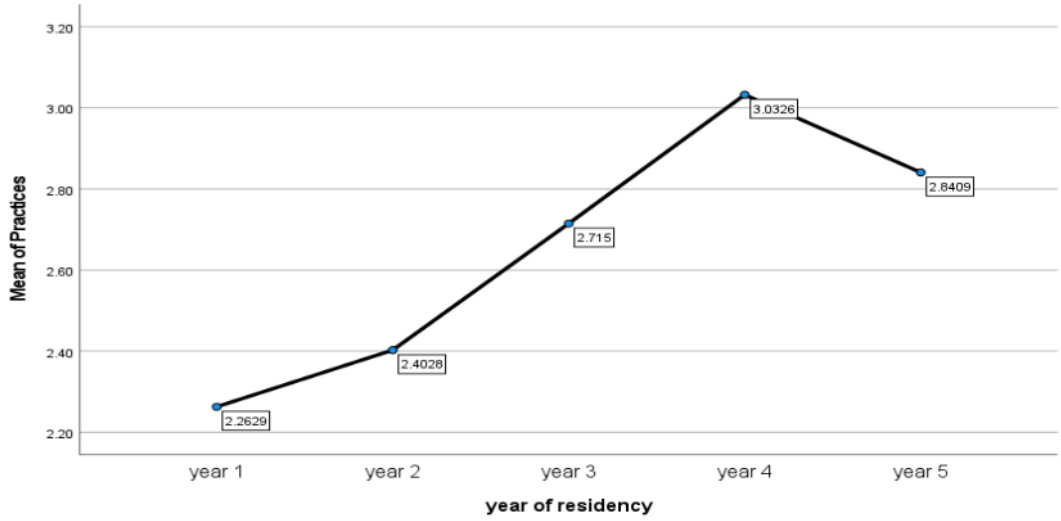

Figure 11: Plot shows mean score practices Difference Between year of specialty, TASH, 2023.

6 Discussion

Preoperative fasting is a crucial aspect of surgical care, as it plays a vital role in reducing the risk of aspiration and associated complications during anesthesia and surgical procedures. The findings of this study provide valuable insights into the knowledge,

attitudes, and practices of postgraduate surgical trainees regarding preoperative fasting guidelines. In this study, suboptimal knowledge about preoperative fasting guidelines among postgraduate surgical trainees, with significant knowledge gaps related to fasting durations for different age groups. While most trainees had positive attitudes towards limiting preoperative fasting, attitudes diverged on practices like keeping patients NPO after midnight. The majority gave fasting orders for elective surgeries, but practices varied in counseling patients on fasting advantages, durations, and meal types.

The study revealed that nearly one-third (34%) of postgraduate surgical trainees had poor knowledge regarding preoperative fasting guidelines. This highlights a concerning knowledge gap among postgraduate surgical trainees regarding preoperative fasting guidelines. This finding is consistent with previous studies that have identified knowledge gaps among healthcare professionals, including surgeons and anesthesiologists, concerning preoperative fasting practices (6,7).

Moreover, the areas of knowledge deficiency observed in determining time of breast milk fasting for children, determining appropriate fasting durations for different age groups, and understanding fasting requirements for regional anesthesia and procedural sedation have been identified as common knowledge gaps in the study report. This report is consistent with another study report that indicated deficiency in identifying duration and timing of preoperative fasting among different age group (6,8). Furthermore, in this study, mean score correct understanding for breast milk fasting is 0.16 (16%) and identifying the duration of fasting for regional and general anesthesia is low. Consistent finding was reported from another studies that poor understanding of the recommendation that recommends of Breast milk may be ingested for up to 4 h before elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation and analgesia (8,12). Moreover, recent research has demonstrated that healthy children should be encouraged to drink clear liquids (water, pulp free juice, carbohydrate drinks) of 3ml.Kg-up to 1 hour before anaesthesia.[16]

For infants under 6 months of age: Breast milk feeding should be encouraged until 3 hours formula Prescribed medications may be taken, with a sip (30ml for an adult) of water up

to 20 minutes prior to anaesthesia. (16) a 2 h fasting interval for fluids does not guarantee an empty stomach(22). On the contrary, there seems to be a considerable inter-individual variation, whilst most children had only small amounts of residual gastric content, some children had up to 90 ml of gastric fluid after either 1 or 2 h of fasting. In fact, in the latter and other studies, there was no obvious correlation between fasting interval and intragastric volume. Furthermore, in an MRI study of gastric contents after a light meal ingested 4 or 6 h, there was no difference in intragastric volume and Preoperative fasting is used to reduce stomach content volume and acidity to avoid reflux of the content(4,22).

The present study identified that there is a variations in knowledge levels across specialties and years of residency training. Pediatric surgery trainees demonstrated the highest mean knowledge score, which could be attributed to the increased awareness and emphasis on preoperative fasting protocols in pediatric settings. Similar to this report previous studies reported that senior professionals and trainers have better knowledge (7,23). Conversely, lower knowledge ratings among OBGYN trainees may indicate the need for specialized educational initiatives in this field. This could be because pediatric surgery trainees often understand the higher stakes of fasting protocol adherence in children, where the hazards of aspiration are particularly severe(24).

The positive impact of having previous training on knowledge levels aligns with the findings of Crenshaw and Winslow (20) who stated that healthcare personnel who had received prior instruction on preoperative fasting guidelines had superior knowledge and adherence to suggested practices. Furthermore, training in clinical guidelines significantly improved the knowledge of clinical applications(25). As a result, educational training should focus on specific areas of knowledge gaps and be suited to the needs of various professions.

The current study found that, while the majority (58%) of trainees supported limiting preoperative fasting for patient benefit, there were mixed feelings on specific procedures, such as keeping patients NPO (nil per os/nothing by mouth) after midnight. This outcome is consistent with earlier research that have found different attitudes and beliefs among healthcare professionals about preoperative fasting practices(20,26). This research finding is inconsistent with preoperative fasting guidelines(27), and other studies that reported

severe complication due to misuse of the guidelines For instance, a meta-analysis of RCTs reports a lower risk of aspiration (i.e., gastric volume < 25 mL and pH > 2.5) when clear liquids are given 2 to 4 h before a procedure Ingested volumes of clear liquids range from 100 ml to unrestricted amounts for adults, and 2 ml/kg to unrestricted amounts for children (Category A1-B evidence)(12).

The present study showed that the majority (93.9%) of postgraduate surgical trainees reported giving fasting orders to patients scheduled for elective surgery, with more than 80% doing so frequently or routinely. However, practice varied in terms of educating patients on the benefits of fasting, durations, and meal kinds. This disparity in patient counseling practices fits with the findings of earlier studies, which have highlighted the need for greater communication and education regarding preoperative fasting guidelines (29,30). Patients drinking protein-containing clear liquids until 2 h before their procedures experienced less hunger compared to fasting and less hunger and thirst compared to drinking other clear liquids. There was no incidence of aspiration in any group (1,3).

The found variation in this study regarding practice on recommendation fasting habits across specialties and years of residency training are consistent with the literature. The study found residency with higher year had better practices; indicating that adherence to preoperative fasting requirements may be influenced by specialty-specific factors, as well as the degree of training and experience. Similarly previous reports also reported having training would improve clinical decision and application for the good patient outcomes (28). This demonstrates that the positive influence of past training on knowledge levels implies that including preoperative fasting education early in residency training programs could develop a strong foundation and support consistent practices throughout the training journey.

6.2 limitation of the study

- It is difficult to get a standard references to classify study subjects knowledge and practice
- Result interpretation was difficult because of lack of previous study of the same kind in the same population

- Since it is descriptive study, it fails to explain the logic behind trainees' poor practice and unfavorable attitude.

7 Conclusion and recommendations

7.2 Conclusions

In this study, overall knowledge of preoperative fasting recommendations among postgraduate surgical trainees was inadequate, with 66% rated as having good knowledge. And respondents had clear understanding about the problem and complications of under fasting while there were knowledge gaps in areas such as knowing the hour and time among children preoperative fasting. This indicate there is knowledge gaps about fasting lengths for different age groups, as well as the fasting needs for regional anesthetic and procedural sedation. Furthermore, knowledge levels varied greatly across specialties, with pediatric surgery trainees having the highest average knowledge score. Knowledge improved with additional years of residency training. Previous training or exposure to preoperative fasting guidelines positively impacted knowledge levels.

Regarding attitude about preoperative fasting, majority 58% had positive attitude. The majority of trainees were in favor of limiting preoperative fasting for patient benefit, although opinions on techniques such as keeping patients NPO after midnight were split. However, there were more mixed attitude on continuing the practice of keeping patients NPO after midnight, with 41.8% strongly disagreeing and 32.7% unsure about this approach.

The majority of trainees reported providing fasting orders for elective procedures, but their approaches to advising patients about fasting benefits, durations, and food kinds varied. The study revealed 6.5% counsel patients on a regular basis, while another 6.5% do so seldom. Trainees in urology and pediatric surgery demonstrated better fasting practices to their patients. And senior trainees had better practice on pre-operative fasting recommendations.

7.3 Recommendations:

The following recommendations are forwarded based on the finding of the study:-

For Surgical Training Program Directors and Curriculum Committees:

- To increase surgical trainees' awareness of preoperative fasting protocols, surgical teams should undertake targeted educational interventions and training programs, focusing on time and duration of pre-operative fasting based on different cases and scenarios considering knowledge gaps.
- Developing specialty-specific training modules or materials to address particular needs and knowledge gaps across surgical specialties can benefit trainees. Moreover, incorporating preoperative fasting teaching early in residency training programs is crucial for establishing a solid foundation and promoting consistent habits.

For department of anesthesiology

- By targeting the knowledge gap it is wise to prepare training module ,seminar for surgical residents during their rotation in anesthesia

For Hospital Administrators and Quality Improvement Teams:

- To ensure consistent implementation across all surgical specialties, hospital administrators and quality improvement teams should evaluate and update preoperative fasting policies and guidelines based on the most recent evidence-based recommendations.
- Regularly assessing surgical trainees and attending physicians' knowledge, attitudes, and behaviors to identify areas for improvement and customize interventions is critical.

For Interprofessional Healthcare Teams (Surgeons, Anesthesiologists, and Nurses):

- It is recommended that senior specialists and professionals should promote multidisciplinary collaboration and communication to ensure consistent implementation of preoperative fasting protocols.
- It is also expected to encourage knowledge sharing and open discussions among team members to address misconceptions or variations in practice.

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Annex

I. Subject information sheet

Addis Ababa University

School of medicine

Subject information sheet

Hello, my name is ----------, I am here in behalf of Dr. Beza mlulat, a student in Addis Ababa University School of medicine. She is conducting a research on "KAP on preoperative fasting hour of post graduate surgical trainee at Tikur Anbesa Specialized Hospital (TASH), Addis Ababa Ethiopia." She has received permission from Addis Ababa University School of medicine and Tikur Anbessa Specialized Hospital officials to conduct the study.

You are selected to participate in this study because you are currently is post graduate surgical trainee at TASH. Your participation in this study will only be based on your willingness to participate. You have the right to choose not to take part in this study. If you are willing, you have the right to stop at any time or withdraw without giving any reason which you will not be subjected to any ill-treatment. There will be no direct benefit by participating in this study but in future information gathered by this study will help policy makers, programmers and researchers to give appropriate attention on issues of interest and design specific corrective measures.

The information that you provide will be kept confidential by using only code numbers and locking the data. Only the members of the study team will have the access to the non-coded data and the data will not be used for purposes other than the study. Your willingness and active participation is very important for the success of this study.

If you need any further information or explanation regarding to the study, you can have this address to contact.

Name: Dr. Beza mulat Tel- +251-921923191 Email- beza.mulat@yahoo.com

II. Questionnaire

Questioner ID_____

Your area of specialty_____

Year of residence _____

Do you have previous training, seminar on the research topic----

Age_____

Sex 1 male 2 Female

Section one: Knowledge

Please encircle the most appropriate answer

a. The following are clear fluids, except

A. Black coffee C. Green tea

B. coconut water D. mango juice

b. When can a three month old child last have breast milk before surgery?

A. 2 hour c 6 hours

B 4 hour d 3 hour

c. Should the time after the last meal be the same for a two days and ten year old child?

A. yes B. no

d. When can a two year old child last have cow's milk before surgery?

A 2 hour C. 6 hours

B 4 hour D. 5 hour

e. What is the problem of under fasting?

A dehydration C. Pulmonary aspiration

B anxiety D. hunger

f. what is the complication of over fasting

A hypoglycemia C. discomfort

B hypervolemia D. all of the above

g. A 65 years old diabetic for the last 30 years scheduled for elective cholecystectomy , the fasting order for solid food should be

A. 6 hour C. 4 hours

B. 8 hour D. 12hour

h. For a 34 year old man , who underwent whipples procedure ,presently on NG tube feeding in surgical ICU and posted for fasciotomy of the right arm

A NG tube feeding should be continued till theater

B NG tube feeding should be discontinued 4 hour prior

C NG tube should be discontinued 6 hour prior

D NG tube feeding should be discontinued 8 hour prior

i. compared to general anesthesia , fasting hour prior to regional anesthesia should be

A longer C same

B shorter D. fasting not needed

j. compared to general anesthesia, fasting prior to procedural sedation should be

A. longer C. shorter

B. same D. no fasting

k. In your perspective, for a patient on NG feeds posted for surgery, the duration fasting should be

A. same as patients on oral feeds C. longer than patients on oral feeds

B. shorter than patients on oral feeds D. fasting does not matter as NG is in place

l. Children should be encouraged to drink how match ml per KG clear fluid 1hr prior to general anesthesia

A. 5ml C. 3ml

B. 8ml D .avoid clear fluid

m. Describe the NPO status for regional anesthesia

A. 8hr solid, 2hr clear liquid C. 10hr solid, 4hr clear liquid

B. 6hr solid, 2hr clear liquid D. no need to fast for regional anesthesia

n. Is there any benefit of limiting preoperative fasting on patient outcome?

A. yes B.no C. maybe

o. Under which circumference do you keep the practice of NPO after midnight?

A. for all patient C. patients with bowel obstruction

B. obese, diabetic and pregnant patient D. for no patient

Section two: Attitude

Questions	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1.limiting perioperative fasting has benefit on patient outcome					
2.pracice of NPO after midnight should be continued					
3.apatient with GOO even after adequate fasting is at risk of aspiration					
4.patients should be kept NPO for regional anesthesia					
5.patients should be kept NPO for procedural sedation					
6.there is no need to limit the amount of fluid a patient can drink before regional anesthesia					
7.pediatrics patients not need to fast prior to procedural sedation					
8.patient need to be counseled about duration and advantage of fasting before the day of procedures					
9.patients need to avoid taking morning of the surgery po medications because it affects fasting status					

10.for geriatrics patients NPO hour should be different from the general adult population					

Section three: Practice

Please encircle the most appropriate answer

1. Have you ever give fasting order for patient scheduled for elective surgery or procedural sedation

A. Yes

B .No

2. If yes, how frequent do you give fasting order

A. seldom (1-25%)

B. Sometimes (26-50%)

C. often (51-75%)

D. routinely (76-100%)

3. Do you council patients about the advantage fasting

A. seldom (1-25%)

B. Sometimes (26-50%)

C. often (51-75%)

D. routinely (76-100%)

4. Do you council patients about disadvantages of prolonged fasting

A. seldom (1-25%)

B. Sometimes (26-50%)

C. often (51-75%)

D. routinely (76-100%)

5. Do you describe for patients the type of meal and the recommended fasting hour?

A. seldom (1-25%)

B. Sometimes (26-50%)

C. often (51-75%)

D. routinely (76-100%)

III 2023 American Society of Anesthesiologists Practice Guidelines for Preoperative Fasting

Recommendations

Recommendation	Strength of Recommendation	Strength of Evidence
1. We recommend healthy adults* drink carbohydrate-containing clear liquids† until 2 h before elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation. The carbohydrates may be simple or complex.	Strong	Moderate
2. There is insufficient evidence to recommend protein-containing clear liquids preferentially over other clear liquids before elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation (no recommendation).	Not applicable	Very low
3. We suggest not delaying elective procedures requiring general anesthesia, regional anesthesia, or procedural sedation in healthy adults* who are chewing gum.‡	Conditional	Very low
4. There is insufficient evidence concerning benefits and harms to recommend pediatric patients drink clear liquids until 1 h *versus* 2 h before procedures with general anesthesia, regional anesthesia, or procedural sedation (no recommendation).	Not applicable	Very low
5. To avoid prolonged fasting in children, efforts should be made to allow clear liquids in children at low risk of aspiration as close to 2 h before procedures as possible. In children with shorter clear liquid fasting duration, exercise clinical judgment.	Best practice statement	Not applicable

*Individuals without coexisting diseases or conditions that may increase the risk for aspiration, including esophageal disorders such as significant uncontrolled reflux disease, hiatal hernia, Zenker's diverticulum, achalasia, stricture, previous gastric surgery (for example, gastric bypass), gastroparesis, diabetes mellitus, opioid use, gastrointestinal obstruction or acute intraabdominal processes, pregnancy, obesity, and emergency procedures. Exercise clinical judgment with this patient population. †Up to 400 mL of clear liquids is considered an appropriate volume. Trial participants ingested a median of 400 mL of carbohydrate-containing clear liquids (interquartile range, 300 to 400 mL) up to 2 h before anesthesia administration. ‡Chewing gum should be removed before any sedative/anesthetic is administered.

Knowledge attitude and practice on preoperative fasting hour of post graduate surgical trainees at Tikur Anbesa Specialized Hospital (TASH), by Beza Mulat

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