CAHIERS MAGELLANES-NS
Volume 06 Issue 2
2024

ISSN:1624-1940
http://magellanes.com/

EXPLORING PATIENT KNOWLEDGE AND CONCERNS ABOUT ANESTHESIOLOGY IN SAUDI ARABIAN ELECTIVE SURGERY SETTINGS

Sabri. A. Soltan[1,2] Dhai Fahad Altwaijri[3], Hussam Mohammed Alsultan[4], Hashim Alwayel[5], Lujain Tawfiq Huldar[6], Ebtehal Hassan Al-Ghazwi[7], Huda Yousef Alhashem[8], Alaa Aljohani[9], Hosam Yousef Alhashem[7], Sattam Almalki[10], Khames T. Alzahrani*[11].

[1]MD, Department of Anesthesia, Faculty of Medicine, Al Azhar University, Cairo, 11651, Egypt.
[2]Anaesthesia consultant, Anesthesia Department, King Abdullah Medical City, Makkah, Saudi Arabia
[3]Medical Intern, College of Medicine, Qassim University, Al-Qassim, Saudi Arabia.
[4]Medical Intern, College of Medicine, King Faisal University, Al-Ahsa, Saudi Arabia.
[5]Medical Student, College of Medicine, King Faisal University, Al-Ahsa, Saudi Arabia.
[6]Medical Student, Jeddah University, Jeddah, Saudi Arabia.
[7]Physician, Al-Ahsa Health Cluster, Al-Ahsa, Saudi Arabia.
[8]Medical Student, Vision Colleges, Riyadh, Saudi Arabia.
[9]Medical Student, King Abdulaziz University, Jeddah, Saudi Arabia.
[10]Medical Intern, King Abdulaziz University, Jeddah, Saudi Arabia.
[11]BDS, PGD Endo from Stanford University, Saudi Board of Endodontic SR, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia.

***Corresponding author**: Khames T. Alzahrani; **Email**: Dr.khames.Alzahrani@gmail.com

Abstract

Introduction: Anesthesia, a cornerstone of modernist smedicine since 1846, has revolutionized surgical practice. Despite its crucial role, studies worldwide reveal inadequate public knowledge about anesthesia and anesthesiologists' multifaceted functions. In Saudi Arabia, where anesthesiology was established in 1956, limited research exists on patients' understanding and perceptions of anesthesia, particularly for elective surgeries. Recent studies in the region indicate low levels of anesthetic knowledge and significant patient concerns. Our study aims to assess knowledge level toward anesthesia and anesthesiologist role during surgery and to determine the concerns and misconceptions about anesthesia among patients undergoing elective surgeries in Saudi Arabia.

Methodology: This is a cross-sectional study conducted from July to November 2024 using an online self-administrated questionnaire. Participants were patients over 18 years old undergoing elective surgery in Saudi Arabia, excluding emergency cases, healthcare personnel, Health specialties students, and those with cognitive disorders. The minimum sample size is 383, calculated using Raosoft with a 5% margin of error and 95% confidence interval. Data was collected via an anonymous Arabic questionnaire, previously validated in a Nigerian study, assessing knowledge, perceptions, and concerns about anesthesia and anesthesiologists' roles.

Results: The study examined patient knowledge and concerns about anesthesiology in elective surgery settings in Saudi Arabia, involving 412 participants. The findings revealed a demographic skew towards females (70.9%) and a majority of Saudi nationals (95.1%). Although 94.9% recognized the term "anesthetist," only 21.1% understood their role in the operating room, highlighting a significant knowledge gap. Notably, 43.7% were unaware of which anesthetist administered their anesthesia, indicating a need for improved patient education. Concerns about post-operative pain (61.9%) and general anesthesia effects (38.6%) were prevalent, emphasizing the necessity for enhanced

ISSN:1624-1940
http://magellanes.com/

communication and transparency to alleviate patient fears.
Conclusion: This study shows gap in patient knowledge and concerns regarding anesthesia in elective surgery settings in Saudi Arabia. The findings underscore the urgent need for targeted educational interventions to enhance patient understanding of anesthesia and the role of anesthesiologists.

Keywords: Knowledge, Attitude, Anesthesia, Saudi Arabia.

Introduction:

Anesthesia stands as one of the most significant advancements in medical history, revolutionizing surgical practice and patient care. It involves the use of drugs to prevent pain during medical procedures, ranging from minor interventions to complex surgeries. This medical specialty has had significant growth in recent decades after its initial successful public demonstration in 1846 by William T.G. Morton [1]. Anesthetist rules extend beyond the operation room; they facilitate preoperative evaluation clinics, pain management clinics, outpatient sedation units, emergency departments, and critical care units [2]. Alcohol, and opium-dipped sponges were the first means of sedation during painful procedures [3]. Formal specialization in anesthesia did not exist until 1934, when surgeons in France established the "Society for the Study of Anesthesia and Analgesia.". In 1940, the American Board of Anesthesiology separated from the American Board of Surgery and became an independent entity in the United States (US) [4]. 1956 marks the initiation of anesthesiology as a fundamental medical science that provides essential support to modern medical services in Saudi Arabia [5].

Studies have disclosed that even in developed countries, the public needs knowledge of anesthesiologists' expertise, role, and multifaceted functions, both within and beyond the confines of the operating room [6].

In Wenzhou, China, a study on surgical patients and their families towards anesthesia was conducted, reporting that overall knowledge was found to be inadequate, and that socioeconomic status played a major role in discrepancies in perception and knowledge of anesthesia; however, the majority of participants had a positive attitude toward anesthesia [7].

In 2019, a study at a pre-anesthetic clinic of a teaching hospital in Nepal was conducted. Only 32% recognized that anesthesiologists are in response of anesthesia administration, and 63% did not know what the different types of anesthesia were. The main reported concern in this study was fear of pain in the OR [8]. In a recent study conducted in Qassim province, Saudi Arabia, the sample showed an overall low degree of anesthetic knowledge [9].

In another study conducted on the public of Saudi Arabia, the most common fear among patients was death during operation, and the study concluded that there is a significant gap in knowledge regarding anesthetist rule and responsibilities [10].

Due to insignificant number of studies related to assessing knowledge levels toward anesthesia in Saudi Arabia. This research can determine the awareness level among citizens and identify concerns and misconceptions about anesthesia among patients undergoing elective surgeries in Saudi Arabia. Which allow us to better understand the situation to allow a better suggestion of strategies to improve awareness levels in the future. We believe that increasing knowledge about anesthesia and the role of anesthesiologists among these patients enhance patient safety, satisfaction, trust, and risk perception in Saudi Arabia. Our study aims to assess knowledge level toward anesthesia and anesthesiologist role during surgery and to determine the concerns and misconceptions about anesthesia among patients undergoing elective surgeries in Saudi Arabia.

ISSN:1624-1940
http://magellanes.com/

Materials and Methods:

Study design and Setting:
A cross-sectional study Conducted between July to November 2024, based on a self-structured questionnaire, this study assesses knowledge level toward anesthesia and determine the concerns and misconceptions about anesthesia among patients undergoing elective surgeries in Saudi Arabia. The study's population involved patients over 18 years of age undergoing elective surgery in Saudi Arabia admitted in different departments.

Sample size:
The minimum sample size is estimated to be 383, with a 5% margin of error and a confidence interval of 95% using the Raosoft calculator.

Inclusion and Exclusion Criteria:
The study was included anyone over the age of 18 who are scheduled to have elective surgery. Both Saudi and non-Saudi participants are eligible. The study was, however, exclude anyone under the age of 18, those undergoing emergency surgery, people who are unable to read and write Arabic, healthcare personnel, Health specialties students, and patients suffering from cognitive or behavioral disorders. The inclusion and exclusion criteria ensure a concentrated and relevant study group, allowing for accurate and meaningful results. By focusing on elective surgery patients, the study hopes to collect data from a specific, controlled group, while the exclusions contribute to the study's integrity and viability. This strategy was help to get trustworthy and appropriate results.

Method for data collection and instrument (*Data collection Technique and Tools)*:
The survey instrument is an online self-administered anonymous questionnaire in Arabic, containing questions regarding anesthesia knowledge, patient's perception to role of anesthesia, anesthesiologists and anesthesia care. This instrument had been employed previously in a Nigerian tertiary health facility [11].

Scoring system:
The primary research tool utilized is a questionnaire. In all, there are 29 questions to evaluate the participants knowledge, attitude and concerns regarding anesthesia.
6 replies for demographics, 4 questions about history to previous anesthesia experience, 9 for knowledge of anesthetist's role, and 9 for attitude toward anesthesia and anesthesiologists, and the 29'th question evaluate 20 items for concerns.
Part I consist of questions about demographics, Part II asked about past anesthesia experience history, Part III asked about patients' opinions of anesthetists' roles, and Part IV asked about patients' perceptions of anesthesia and their curiosity.
In Part II and III the 15 questions were used to assess knowledge, every right answer was given 1 mark, while every wrong answer was given 0 mark, providing a score of 19 as the highest possible, were divided into 3 degrees, as follows the originals blooms cut off points. 100%-80%, 70%-60% and 59%. Knowledge score Various from 0-19 points, those with points of 11 or lower having low grade of knowledge, while those with 12-14 points having middle grade of knowledge, and those with 15 points or more having High grade of knowledge.
In Part IV the 9 questions were used to assess attitude, every right answer was given 1 mark, while every wrong answer was given 0 mark, providing a score of 9 as the highest possible, were divided into

ISSN:1624-1940
http://magellanes.com/

3 degrees, as follows the originals blooms cut off points. 100%-80%, 79%-60% and 59%.
Attitude score various from 0-9 points, those with points of <5 having low grade of attitude, while those with 6-7 points having middle grade of attitude, and those with >8 points having High grade of attitude.

Pilot study:
Twenty people were given the survey and asked to fill it in. This was done to assess the study's validity and its simplicity. The pilot study's data was not included in the study's final analysis.

Analyzes and entry method:
Collected Data was entered on computer using the Microsoft Excel program (2021) for windows. Data was then transferred to the Statistical-Package of Social-Science Software (SPSS) program, version 20. To be statistically analyzed.

Results:

Table (1) displays various demographic parameters of the participants with a total number of (412). The age distribution shows a relatively balanced distribution, with the biggest percent (28.2%) of his percentage in the category of individuals aged over 45 years, then the percentage of its age group (26.2%) to the age group of 23 to 34 years. The gender distribution is largely female (70.9 per cent) and may indicate social tendencies within the context under investigation. It's worth noting that the majority of respondents are Saudi nationals (95.1%) with a small minority who are non-Saudi. The Eastern region is the geographically represented the most (35.0%) and least the Southern region (0.2%). Higher education is strongly pursued with 58.5% holding a bachelor's degree. The participants have diverse occupations, as they comprise a large share of students (27.7%) and unemployed people (30.1%). In general, this data reveals interesting insights regarding the composition of the demographic studied in general.

Table (1): Sociodemographic characteristics of participants (n=412)

Parameter		***No.***	***Percent (%)***
Age	Less than 23	104	25.2
	23 to 34	108	26.2
	35 to 45	84	20.4
	More than 45	116	28.2
Gender	Female	292	70.9
	Male	120	29.1
Nationality	Saudi	392	95.1
	Non-Saudi	20	4.9
Residential region	Northern region	65	15.8
	Southern region	1	.2
	Central region	102	24.8
	Eastern region	144	35.0
	Western region	100	24.3
Educational level	Primary school	10	2.4
	Middle school	14	3.4
	High school	90	21.8

ISSN:1624-1940
http://magellanes.com/

	Diploma	27	6.6
	Bachelor's degree	241	58.5
	Postgraduate	22	5.3
	Uneducated	8	1.9
Occupation	Student	114	27.7
	Employed	131	31.8
	Unemployed	124	30.1
	Retired	43	10.4

As shown in figure 1, Responses from 412 people who were asked if they knew which anesthesiologist had given them anesthesia before were also collected. Of the total, 232 respondents (56.3%) said they knew the anesthesiologist, and 180 respondents (43.7%) did not know who's anesthesia they received. The distribution of these findings is nearly balanced, with the slight majority answering positively.

Figure (1): Illustrates knowing who gave anesthesia among participants.

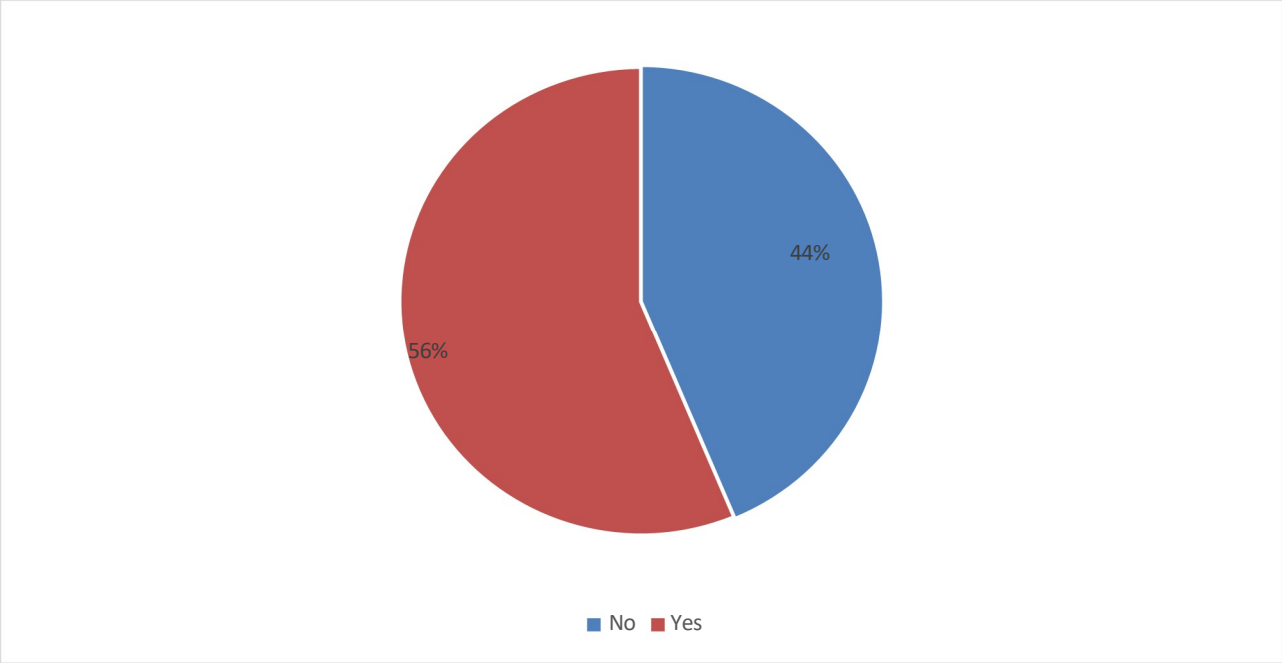

Table 2 contains helpful data presented on the history and perceptions of anesthesia and a cohort of 412 patients. In particular, all respondents reported prior exposure to anesthesia, largely through scheduled elective cases, indicating a well-developed knowledge of surgical procedures. However, 43.7% of patients were unaware which specific anesthetist performed their current and previous anesthesia and represents a potential gap in the patient education up on anesthesia providers. The high proportion of general anesthesia (74%) of participants again reflects commonality in surgical practices, but also a low regional anesthesia awareness (only 21.6% had experience with regional anesthesia) which may indicate an area for enhanced patient communication. In addition, even though 87.9 per cent knew the term 'anaesthetist', there's still remaining misconceptions about what they play

ISSN:1624-1940
http://magellanes.com/

in the operating room, with only 21.1 per cent recognising that they are the most public authority in the operating theater.

Table (2): Parameters related to history related to previous anesthesia experience, patient knowledge of anesthesia and perception of roles of anaesthetists (n=412).

Parameter		*No.*	*Percent (%)*
Have you had any exposure to anaesthesia before?	No	0	0
	Yes	412	100.0
if you had an exposure to anesthesia, was it:	an emergency case	0	0
	scheduled elective case	412	100.0
If you have had an operation under anaesthesia before, do you know who gave you the anaesthesia?	No	180	43.7
	Yes	232	56.3
What type of anaesthesia have you experienced before? *	General	305	74.0
	Regional	99	24.0
	Local	103	25.0
	Nerve block	8	1.9
	Conscious sedation	14	3.4
	I don't know	25	6.1
	None	6	1.5
Number of times of previous experience of general anaesthesia?	1	159	38.6
	2	90	21.8
	More than 2	96	23.3
	None	50	12.1
	I don't know	17	4.1
Number of times of previous experience of regional anaesthesia?	1	89	21.6
	2	18	4.4
	More than 2	18	4.4
	None	264	64.0
	I don't know	23	5.6
Are you familiar with the word anaesthetist?	No	50	12.1
	Yes	362	87.9
Who is in charge of operating theatre?	Anaesthetist	87	21.1
	Perioperative Nurse	56	13.6
	Surgeon	77	18.7
	Intensivist	14	3.4
	I don't know	178	43.2
Is an anaesthetist a qualified doctor?	No	13	3.2
	Yes	399	96.8
During operation, who ensures the well-being of the patient?	Anaesthetist	227	55.1
	Perioperative attendant	42	10.2
	Anaesthetist technician	32	7.8
	I don't know	111	26.9

ISSN:1624-1940
http://magellanes.com/

During operation, once the patient is sleeping, what does the anesthesiologist do?	Monitor patients' vitals sign closely.	334	81.1
	eating and drinking	1	.2
	Stays outside the OR	10	2.4
	I don't know	67	16.3
Who looks after the patient immediately after anaesthesia?	Recovery room nurse	153	37.1
	Anaesthetist	162	39.3
	Ward nurse	97	23.5
If the anaesthetist stays with the patient during the operation, what do they do? *	Give patient pain relief drugs	111	26.9
	Monitor blood loss	88	21.4
	Give patient sleeping drugs	152	36.9
	Monitor patients 'vital signs	320	77.7
	Give the surgical instrument to the surgeon	18	4.4
	I don't know	73	17.7
Do Anaesthetists have any role outside the operating theatre?	No	46	11.2
	Yes	201	48.8
	I don't know	165	40.0
If anaesthetists have a role outside the operating room, in which area are they important? *	Intensive care	154	37.4
	Labour ward	105	25.5
	Emergency room	134	32.5
	Pain relief	129	31.3
	I don't know	143	34.7

Results may overlap

As shown in figure (2), With 412 respondents, the survey explored how modern anesthesia makes you feel about safety. However, 81.3 percent, 335 respondents, believed anesthesia is safe if administered by trained professionals thus emphasising the need of expertise in patient safety. In fact, 57 respondents (13.8 percent) considered it extremely dangerous and warned that it's something to be avoided as much as possible if at all possible. Only 4 respondents (1%) said anesthesia was safe only for healty individuals, a sign of minor support of this view. In addition, 16 respondents (3.9%) were of the view that the safety of anesthesia was not relevant to the surgical outcome, a view which is rare and uncommon.

ISSN:1624-1940
http://magellanes.com/

Figure (2): Illustrates safety of modern anesthesia among participants.

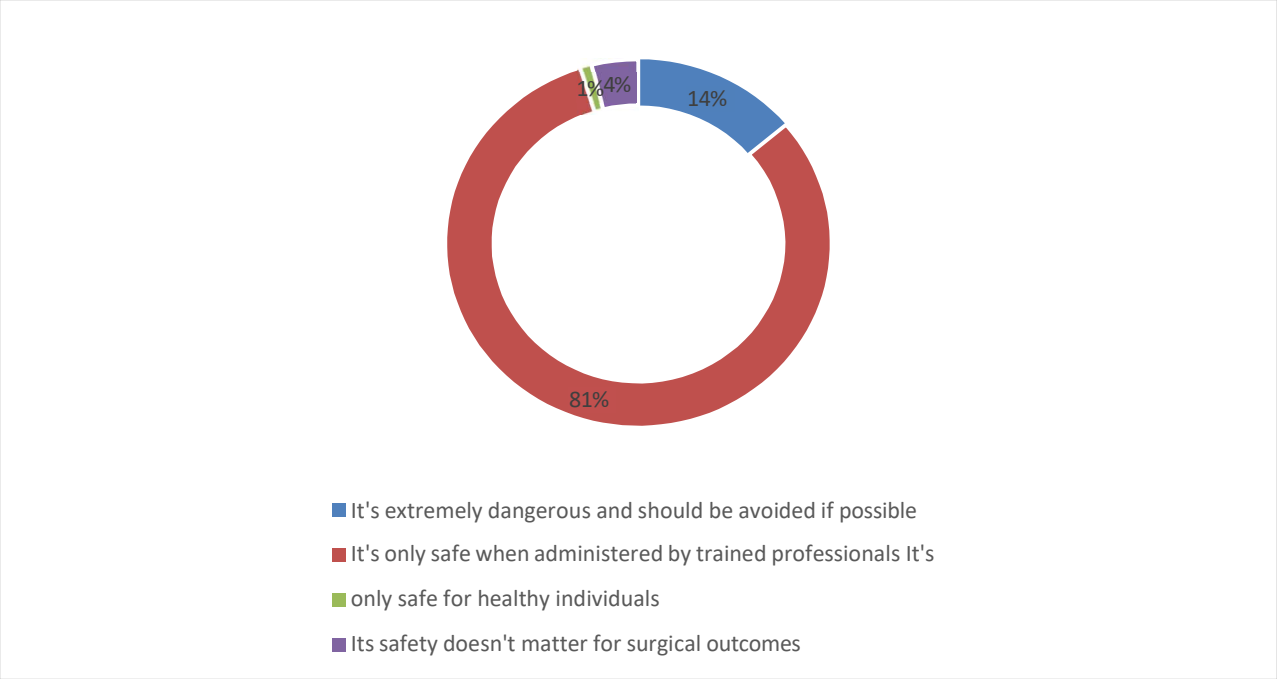

Table 3 shows vital information about participants' perceptions and aspirations about anaesthesia. Nearly all respondents (94.9%) report being familiar with the term, suggesting that this is a generally known term without also suggesting that there is an in depth understanding of what the term actually refers to. Significantly, a high proportion (76.7%) highlights a strong interest in anaesthesia information when providing a compelling 76.7% who want more information about anaesthesia. This is further evidence of the priority for transparency and comfort in the pre-operative setting given that the high percentage (86.4%) of individuals giving their preference to know their anaesthetist. Although many respondents admit to fear or anxiety about anaesthesia and surgery, an overwhelming 81.3% declare that anaesthesia used today is safe when provided by qualified personnel.

Table (3): participants' perception of anaesthesia and desire to know (n=412).

Parameter		***No.***	***Percent (%)***
Are you familiar with the word anaesthesia?	No	21	5.1
	Yes	391	94.9
Would you like to have more information about anaesthesia?	No	96	23.3
	Yes	316	76.7
If you are scheduled for a surgical procedure, would you like to know who your anaesthetist is?	No	56	13.6
	Yes	356	86.4
Would you like to choose your anaesthetist, if required?	No	109	26.5
	Yes	303	73.5
Are you afraid you will have to undergo	No	154	37.4

ISSN:1624-1940
http://magellanes.com/

surgery under anaesthesia as part of treatment for your condition?	Yes	258	62.6
Which one are you afraid of?	Anaesthesia	39	9.5
	Surgery	68	16.5
	Both	223	54.1
	None	82	19.9
How should patients view the safety of modern anesthesia?	It's extremely dangerous and should be avoided if possible	57	13.8
	It's only safe when administered by trained professionals	335	81.3
	It's only safe for healthy individuals	4	1.0
	Its safety doesn't matter for surgical outcomes	16	3.9
What is the appropriate attitude towards following pre-anesthesia instructions?	They're optional suggestions	19	4.6
	They're important and should be followed carefully	356	86.4
	They're only for major surgeries	18	4.4
	They don't affect the anesthesia process	19	4.6
What is the best approach to discussing fears about anesthesia?	Keep them to yourself to avoid bothering the medical team	35	8.5
	Only discuss them with family and friends	22	5.3
	Share them openly with your anesthesiologist	320	77.7
	Ignore them as they're not important	35	8.5

Table 4 presents data that provide a comprehensive overview of the participants' concerns with anesthesia that indicates nuanced perceptions that important for improving preoperative communication and education. Of particular note, apprehensions regarding post-operative pain are extreme – with a whopping 61.9 percent of the respondents reporting extremely high fear about pain that ensues after the operation. Similarly, 38.6 percent of participants expressed serious concerns about general anesthesia's potential effect on conscious recovery and awareness during surgery, and 46.6 percent expressed serious worries regarding the recovery of conscious during surgery. Indeed, the anesthesiologist's skills are shrouded in anxiety as almost 50.7 percent were afraid that he wouldn't do the job right. Second, these findings also correspond with other substantial stressors in the sphere of a major surgery such as nausea and vomiting post-surgery expressed as fundamental stressor in terms of 50.2% moderate concerns about the outcomes.

ISSN:1624-1940
http://magellanes.com/

Table (4): Participants concerns regarding anesthesia (n=412).

Parameter		***No.***	***Percent (%)***
I am afraid of: Pain during operation	Not at all	111	26.9
	somewhat	166	40.3
	very much	135	32.8
I am afraid of: Pain after operation (post-operative pain)	Not at all	34	8.3
	somewhat	123	29.9
	very much	255	61.9
I am afraid of: Being sleepy/ drowsy for hours after surgery/ delayed recovery from consciousness after surgery	Not at all	97	23.5
	somewhat	182	44.2
	very much	133	32.3
I am afraid of: Not waking up after the surgery (death)	Not at all	77	18.7
	somewhat	176	42.7
	very much	159	38.6
I am afraid of: Being nauseous postoperatively	Not at all	80	19.4
	somewhat	207	50.2
	very much	125	30.3
I am afraid of: Needles and drains in the theatre	Not at all	155	37.6
	somewhat	159	38.6
	very much	98	23.8
I am afraid of: Awareness of the surrounding during theatre	Not at all	94	22.8
	somewhat	160	38.8
	very much	158	38.3
I am afraid of: Revealing personal issues due to the effect of anaesthesia	Not at all	108	26.2
	somewhat	142	34.5
	very much	162	39.3
I am afraid of: Vomiting after the surgery	Not at all	86	20.9
	somewhat	207	50.2
	very much	119	28.9
I am afraid of: The anaesthetist leaving the theatre suite during surgery	Not at all	147	35.7
	somewhat	151	36.7
	very much	114	27.7
I am afraid of: improper care/ the anesthesiologist is not being skilled	Not at all	63	15.3
	somewhat	140	34.0
	very much	209	50.7
I am afraid of: Unsuccessful GA	Not at all	85	20.6
	somewhat	140	34.0
	very much	187	45.4
I am afraid of: Unsuccessful RA	Not at all	82	19.9
	somewhat	129	31.3
	very much	201	48.8
I am afraid of: Waking up in the middle of the surgery	Not at all	99	24.0
	somewhat	121	29.4

ISSN:1624-1940
http://magellanes.com/

	very much	192	46.6
I am afraid of: Being paralyzed because of anaesthesia	Not at all	123	29.9
	somewhat	128	31.1
	very much	161	39.1
I am afraid of: Admission into ICU	Not at all	75	18.2
	somewhat	171	41.5
	very much	166	40.3
I am afraid of: General anaesthesia may affect my thought clarity.	Not at all	136	33.0
	somewhat	146	35.4
	very much	130	31.6
I am afraid of: About complete recovery after discharge	Not at all	96	23.3
	somewhat	173	42.0
	very much	143	34.7
I am afraid of: Having backache because of spinal anaesthesia	Not at all	103	25.0
	somewhat	158	38.3
	very much	151	36.7
I am afraid of: Having headaches because of spinal anaesthesia	Not at all	98	23.8
	somewhat	179	43.4
	very much	135	32.8

Table 5 provides an insight on which areas of elective surgery setting in Saudi Arabia are deficient in terms of knowledge level of anesthesiology and highlights a gap in educational proficiency. One can infer a great deal of gaps in training and awareness, with only 13.6% of respondents reporting a high degree of knowledge. Additionally, the moderate knowledge category population (30.6 % of sample) indicates that while some practitioners do have a foundation al knowledge, it is not sufficient to provide best care and safety to patients. Unfortunately, 55.8% of them had a low level of knowledge.

Table (5): Shows knowledge about anesthesiology in Saudi Arabian elective surgery settings score results.

	Frequency	**Percent**
High level of knowledge	56	13.6
Moderate knowledge	126	30.6
Low level of knowledge	230	55.8
Total	412	100.0

Table 6 shows data which depicts the attitudes towards anesthesiology in elective surgery settings in Saudi Arabia which among other revealed that plenty of were moderately neutral. Of the 412 respondents who responded, 58.7 percent had moderate grade of attitude; 17.2 percent had high grade attitude; and 24.0 percent had low grade attitude.

ISSN:1624-1940
http://magellanes.com/

Table (6): Shows attitude about anesthesiology in Saudi Arabian elective surgery settings score results.

	Frequency	Percent
High grade	71	17.2
Moderate grade	242	58.7
Low grade	99	24.0
Total	412	100.0

Table (7) shows that knowledge about anesthesiology in Saudi Arabian elective surgery settings has statistically significant relation to occupation (P value=0.0001). It also shows statistically insignificant relation to gender, age, nationality, residential region and educational level.

Table (7): Relation between knowledge about anesthesiology and sociodemographic characteristics.

Parameters		***Knowledge level***		***Total (N=412)***	***P value****
		High or moderate knowledge	**Low level of knowledge**		
Gender	Female	134	158	292	0.274
		73.6%	68.7%	70.9%	
	Male	48	72	120	
		26.4%	31.3%	29.1%	
Age	Less than 23	49	55	104	0.477
		26.9%	23.9%	25.2%	
	23 to 34	52	56	108	
		28.6%	24.3%	26.2%	
	35 to 45	32	52	84	
		17.6%	22.6%	20.4%	
	More than 45	49	67	116	
		26.9%	29.1%	28.2%	
Nationality	Saudi	173	219	392	0.939
		95.1%	95.2%	95.1%	
	Non-Saudi	9	11	20	
		4.9%	4.8%	4.9%	
Residential region	Northern region	26	39	65	0.544
		14.3%	17.0%	15.8%	
	Southern region	0	1	1	
		0.0%	0.4%	0.2%	
	Central region	41	61	102	
		22.5%	26.5%	24.8%	
	Eastern region	70	74	144	
		38.5%	32.2%	35.0%	
	Western region	45	55	100	
		24.7%	23.9%	24.3%	

ISSN:1624-1940
http://magellanes.com/

Educational level	Primary school	1	9	10	0.205
		0.5%	3.9%	2.4%	
	Middle school	5	9	14	
		2.7%	3.9%	3.4%	
	High school	37	53	90	
		20.3%	23.0%	21.8%	
	Diploma	11	16	27	
		6.0%	7.0%	6.6%	
	Bachelor's degree	115	126	241	
		63.2%	54.8%	58.5%	
	Postgraduate degree	8	14	22	
		4.4%	6.1%	5.3%	
	Uneducated	5	3	8	
		2.7%	1.3%	1.9%	
Occupation	Student	52	62	114	0.0001
		28.6%	27.0%	27.7%	
	Employed	75	56	131	
		41.2%	24.3%	31.8%	
	Unemployed	45	79	124	
		24.7%	34.3%	30.1%	
	Retired	10	33	43	
		5.5%	14.3%	10.4%	

****P value was considered significant if ≤ 0.05.***

Table (8) shows that attitude about anesthesiology in Saudi Arabian elective surgery settings has statistically significant relation to age (P value=0.015), nationality (P value=0.005), occupation (P value=0.006). It also shows statistically insignificant relation to gender, residential region and educational level.

Table (8): Attitude about anesthesiology in association with sociodemographic characteristics.

Parameters		***Attitude level***		***Total (N=412)***	***P value****
		High or moderate grade	**Low grade**		
Gender	Female	228	64	292	0.118
		72.8%	64.6%	70.9%	
	Male	85	35	120	
		27.2%	35.4%	29.1%	
Age	Less than 23	67	37	104	0.015
		21.4%	37.4%	25.2%	
	23 to 34	88	20	108	
		28.1%	20.2%	26.2%	
	35 to 45	67	17	84	
		21.4%	17.2%	20.4%	
	More than 45	91	25	116	
		29.1%	25.3%	28.2%	

ISSN:1624-1940
http://magellanes.com/

Nationality	Saudi	303	89	392	0.005
		96.8%	89.9%	95.1%	
	Non-Saudi	10	10	20	
		3.2%	10.1%	4.9%	
Residential region	Northern region	44	21	65	0.097
		14.1%	21.2%	15.8%	
	Southern region	1	0	1	
		0.3%	0.0%	0.2%	
	Central region	75	27	102	
		24.0%	27.3%	24.8%	
	Eastern region	120	24	144	
		38.3%	24.2%	35.0%	
	Western region	73	27	100	
		23.3%	27.3%	24.3%	
Educational level	Primary school	7	3	10	0.127
		2.2%	3.0%	2.4%	
	Middle school	9	5	14	
		2.9%	5.1%	3.4%	
	High school	59	31	90	
		18.8%	31.3%	21.8%	
	Diploma	20	7	27	
		6.4%	7.1%	6.6%	
	Bachelor's degree	194	47	241	
		62.0%	47.5%	58.5%	
	Postgraduate degree	17	5	22	
		5.4%	5.1%	5.3%	
	Uneducated	7	1	8	
		2.2%	1.0%	1.9%	
Occupation	Student	74	40	114	0.006
		23.6%	40.4%	27.7%	
	Employed	106	25	131	
		33.9%	25.3%	31.8%	
	Unemployed	102	22	124	
		32.6%	22.2%	30.1%	
	Retired	31	12	43	
		9.9%	12.1%	10.4%	

P value was considered significant if ≤ 0.05.

Discussion:

This study looks into the findings on patient knowledge and concerns about anesthesiology among elective surgery settings in Saudi Arabia. The purpose of the present study is to evaluate what patients know concerning anesthesia, as well as what concerns and misconceptions are held by patients undergoing elective surgical procedures. Given the history of anesthesiology in Saudi Arabia and the

ISSN:1624-1940
http://magellanes.com/

observed gaps in public understanding of this important medical specialty, this investigation is particularly significant.

What our study found was a troubling lack of knowledge among patients about anesthesia and the anesthesiologist. Although all participants had previous exposure to anesthesia, 43.7% did not know which anesthetist they received anesthesia from. This finding is consistent with previous research in multiple settings that has found that patients typically exceed knowledge about anesthesia and the people who provide care to them. For example, in Nigeria, only 50% of participants recognised as doctors who can administer anesthesia anesthesiologists [12]. Another such study examined the Nepal patients to see that although many knew that anesthesiologists were in the operating room, only 49.2% knew what the anesthesiologists do [13]. The finding that anesthesia raises the risk of awareness suggests the need for greater patient education about anesthesia, especially in those regions in which the rates of awareness are extraordinarily low.

In addition, we found that of respondents who recognized the term anesthetist, 87.9 percent understood their invaluable role in the operating room, yet only 21.1 percent knew it. This discrepancy shows a large gap in patient education and our awareness of the issue has been echoed in other studies. For instance, in China, research showed that patients' familiarity with anesthesiologists was considerable correlated with their educational level and history of previous surgical experience, however many patients still did not fully comprehend the anesthesiologist's role [14]. It implies that recognizing a term doesn’t mean you understand what complexities are involved with the profession enough to help patients stave off misconceptions and their anxiety.

During collection, our participants displayed extremely fearful concerns about post-operative pain (61.9%) or being under general anesthesia (38.6%) during surgery. They align with other studies that show that fear of anesthesia is a common fear among surgical patients. A study in Turkey revealed patients often voiced worries regarding the competence of anesthesiologists and blood pressure medication (e. g. nausea and vomiting) [15]. A study in Ethiopia also found that many patients were not familiar with the job of the anesthesiologist, resulting in the already described anxiety and fear of anesthesia [16]. As this implies, to greatly improve both patient comfort and satisfaction, these issues can be particularly effectively mitigated through communication and education improvement.

Our findings showed high need of more information about anesthesia, with 76.7% of participants saying they need increased transparency in the anesthesia practices. That is especially important because studies have demonstrated that patients who are more informed tend to be less anxious, and feel more satisfied with their surgical experience [17]. A study from Brazil determined that patients given exhaustive preoperative information about anesthesia were less anxious and more secure of their upcoming procedures than patients given no information whatsoever [18]. This implies that an effort to reduce patient fears and misconception about anesthesia should be done by healthcare providers primarily through patient education. This study notwithstanding, several limitations are acknowledged. The cross-sectional design of the study does not preclude the establishment of the causal relationships between knowledge levels and patient concerns. The reliance on self-reported data is also a source of bias since participants may overstate their knowledge or underplay their concerns. Additionally, the study was performed under a specific cultural constraint, rendering its generality to other regions or populations less than ideal. Future research should embrace longitudinal designs and diverse populations in exploring future the dynamics of patient knowledge and concerns of anesthetic risks.

Conclusion:

Between these results some significant gaps in patient knowledge and concerns about anesthesia in the elective surgery setting were reported by this study. The findings emphasise the need for targeted

ISSN:1624-1940
http://magellanes.com/

education interventions designed to improve patient understanding regarding anesthesia and anesthesiologists' role. If these gaps are addressed, the quality of care in surgical settings can be improved by reducing patient anxiety and improving patient comfort.

Acknowledgement:

We thank the participants who all contributed samples to this study.

Ethical approval:

An informed consent was obtained from each participant after explaining the study in full and clarifying that participation is voluntary. Data collected were securely saved and used for research purposes only.

Funding:

There was no external funding for this study.

Conflict of interests:

The authors declare no conflict of interest.

Informed consent:

Written informed consent was acquired from each individual study participant.

Data and materials availability:

All data associated with this study are present in the paper.

References:

1. Renuka R. Perception about anaesthesia and anaesthesiologists among non-medical graduate professionals. Southern African Journal of Anaesthesia and Analgesia. 2021;27(6):299–303.
2. Abdullayev R, Ekinci Ö, Taştan ME, Uluç ÖS, Hıdıroğlu S, Zengin MB, et al. Preoperative patients' knowledge level regarding anesthesia procedures and anesthesiologist responsibilities. Eurasian Journal of Anesthesiology and Intensive Care. 2024 May 16;1(2):29–34.
3. ÖZYAPRAK B, KILIÇARSLAN N, ERKAN G. Preoperative evaluation of the knowledge and concerns of gynecology patients regarding anesthesia: A questionnaire based observational study. Journal of Surgery and Medicine. 2020 Jan 30;
4. Selim J, Selim M, Demailly Z, Wable T, Clavier T, Besnier E, et al. The Perception of the Anesthesiologist Among the Medical, Paramedical and Administrative Staff. Front Med (Lausanne). 2022 Apr 21;9.

5. Seraj MA. Development of anesthesiology and medical service in KSA 1956-2011. Anesth Essays Res. 2012;6(2):195–9.
6. Jaju R, Varshney S, Bihani P, Paliwal N, Karim HMR, Bhuyan D. Enhanced perioperative communication elevates patients' understanding, perception, and satisfaction for anesthesia services: Insights from a survey study. Saudi J Anaesth. 2024;18(3):376–87.
7. Wang J, Wang S, Zeng R. Knowledge and attitude of surgical patients and their families toward anesthesia. Front Med (Lausanne). 2024;11.
8. Moktan SL, Shrestha U, Sharma M, Karki M. Awareness and concern towards anesthesia among patients undergoing surgical procedure: A cross-sectional study at pre-anesthetic clinic of a Teaching Hospital. Journal of Kathmandu Medical College. 2019 Jun 30;8(2):76–80.
9. Geddawy MA, Alkraydees SS, Almadhi M, Alashqar SA, Alghelfes AI, Aljabaan B. Public Awareness and Knowledge About Anesthesiology and the Role of Anesthesiologists in Al-Qassim Province, Saudi Arabia. Cureus. 2023 Feb 14;
10. Almutairi NG, Alorainy MH, Aldayel AM, Alotaibi HA, Alkathami SA, Alghamdi WA. Public Knowledge and Perception of Anesthesia, Anesthesiologists' Expertise, and Their Role Among Saudi Citizens Residing in Saudi Arabia. Cureus. 2023 Aug 28;
11. Emmanuel E, Fatungase O, Shoyemi R. Patients' Perception of Anaesthesia, the Anaesthetist and Experience of Anaesthesia Care. Annals of Health Research. 2022 Sep 7;8(3):229–43.
12. Eyelade, O., Akinyemi, J., & Adewole, I. (2010). Patients' perception and knowledge of anaesthesia and anaesthetists—a questionnaire survey. Southern African Journal of Anaesthesia and Analgesia, 16(4), 28-31. https://doi.org/10.1080/22201173.2010.10872695
13. Shrestha, A., Shrestha, G., Acharya, B., Joshi, P., Bhattarai, A., Upadhyay, B., … & Marhatta, M. (2020). Knowledge and perception about anesthesia and anesthesiologist in patients undergoing surgery in nepal. Grande Medical Journal, 2(1), 37-42. https://doi.org/10.3126/gmj.v2i1.45693
14. Li, M., Ma, L., Yu, X., & Huang, Y. (2019). A survey of surgical patient's perception about anesthesiologist in a large scale comprehensive hospital in china. Chinese Medical Sciences Journal, 34(2), 140-146. https://doi.org/10.24920/003503
15. Sagün, A., Birbiçer, H., & Yapıcı, G. (2013). Patients′, who applied to the anesthesia clinic, perceptions and knowledge about anesthesia in türkiye. Saudi Journal of Anaesthesia, 7(2), 170. https://doi.org/10.4103/1658-354x.114076
16. Atsbeha, M. and Mitiku, M. (2023). Assessment of surgery and anesthesia services and patients' attitude towards informed consent: the case of a specialized and comprehensive university hospital in northern ethiopia. Journal of Health Science and Medical Research, 2023944. https://doi.org/10.31584/jhsmr.2023944
17. Leite, F., Silva, L., Biancolin, S., Dias, A., & Castiglia, Y. (2011). Patient perceptions about anesthesia and anesthesiologists before and after surgical procedures. Sao Paulo Medical Journal, 129(4), 224-229. https://doi.org/10.1590/s1516-31802011000400005
18. Agrawal, M., Singh, M., Bansal, P., Jindal, T., & Yousuf, I. (2020). Anaesthesia and anaesthesiologist: the perception of attendees at a medical college in rural haryana. Academia Anesthesiologica International, 5(2), 20-25. https://doi.org/10.21276/aan.2020.5.2.4