

Perception of Medical Graduates towards Anaesthesiology: A Prospective Cross-sectional study

Rosi Pradhan,¹ Anil Maharjan,¹ Bibena Lamichhane,¹ Anisha Bhochhibhoya,¹ Samundra Kumar Shrestha,¹ Ashmita Bhochhibhoya,² Uttam Laudari³

Abstract

Introduction: Despite the availability of a number of specialties, only few areas come as a choice for post-graduation. The main purpose of this study was to determine the perception of undergraduate students towards anesthesiology and the factors that determine considering or not considering anesthesiology as a career.

Methods: A questionnaire based cross-sectional study was conducted among medical interns at KIST medical college teaching hospital in January 2018. Seventy interns participated in this study. The questionnaire sought information on their perception and reasons for considering or not considering anesthesiology.

Results: Majority of the medical interns [58 (82.85%)] had decided the subject to specialize in future. Forty one (70.68%) chose surgery as their career choice. It was followed by Internal medicine- 35(60.34%), Anesthesia- 21(36.2%), Orthopedics- 19(32.75%) and Gynecology- 8(13.79%). Among the participants who chose anesthesia as their career choice, five (8.62%) stated anesthesia as their first career preference, three (5.17%) as their second and 13(22.41%) as their third career preference. The positive key attributes of choosing anesthesiology was mostly because they were interested in critical care 19(90.47%), satisfaction from the immediate result seen 15(71.42 %) and minimum patient contact 12(57.14%). The negative attributes of anesthesiology highlighted were risky job 23 (46.93%), lack of recognition by patient 13(26.53%) and minimum patient contact 12 (24.48%).

Conclusion: Findings suggests that perceptions of medical students towards anesthesiology are manifold. Duration of internship has biggest influence on motivating undergraduate students towards pursuing anesthesiology as a career.

Keywords: Anesthesiology; Career choice; Medical students.

Author affiliations:

¹ Kist Medical College, Imadol, Lalitpur, Nepal,

² Kathmandu Medical College, Sinamangal, Kathmandu, Nepal.

³ Dhulikhel Hospital, Kavrepalanchowk, Nepal

Correspondence:

Dr.Rosi Pradhan, Department of Anesthesiology, KIST Medical College, Imadol, Lalitpur, Nepal

Email: rosy_pradhan5@hotmail.com.

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Introduction

To choose post-graduation career choice is a very challenging and an important issue for all medical graduates. Anesthesia has a major role in surgery and critical care. Yet it is considered as a minor subject and duration of internship is also limited. In our country medical colleges usually have two weeks of rotation during their internship for anesthesia department.¹ This is the period to know about anesthesiology as well as to learn about the critical care. Exposure to respective specialty will increase the chances of recruitment in that particular department for post-graduation.² A study conducted among 1137 medical students in Nepal concluded that serving the sick patients, personal interest and social prestige were the most influencing factors for pursuing their medical career.³ In January 2011, a questionnaire based study was conducted among Dhulikhel Hospital paramedical staffs regarding the perception and role of anesthesia. Even though the study were conducted among the paramedics only 49.20% knew anesthesia was a different speciality.¹ This gives us the idea about the current status of the field in Nepal. This study helps to know the perception of medical graduates toward anesthesiology and also to determine the factors responsible for influencing career decision in our part of the world.

Methods

This descriptive cross-sectional study was conducted at KIST medical college and Teaching Hospital over a period of six months. The study was approved from Institutional review board of KIST medical college. Total duration of internship rotation in department of anesthesia at KIST medical college is of two weeks where they are subjected both to Anesthesiology

and Critical care. The participants were approached in their respective departments and a validated self-reporting questionnaire was delivered to them and answers were obtained. Informed written consent was obtained from all the participants. The questionnaire was taken with permission from the author Khan FA et al.² Questionnaire was distributed to all interns. After finishing their questionnaire they submitted the paper to the investigator. Responses from the participants were analyzed using descriptive statistics. SPSS 20 was used for statistical analysis.

Results

A total of 70 medical interns participated in this study. Out of them, 52 (74.28 %) were males and 18 (25.71%) were females. Majority of medical interns 58 (82.85%) had decided the subject to specialize in future as shown in **Table 1**. Forty one (70.68%) interns chose surgery as their career choice and it was the first choice for 16(27.58%). It was followed by Internal medicine- 35(60.34%), Anesthesia-21(36.2%), Orthopedics-19(32.75%) and Gynecology-8(13.79%). Total 21 (36.2%) participants chose anesthesia as their career choice. Among them five (8.62%) stated anesthesia as their first career preference, three (5.17%) decided anesthesia as their second career preference followed by 13 (22.41%) as their third career preference. Anesthesiology ranked fourth in first choice popularity among the specialties with five (8.62 %) of the decided participants.

Table 1. Career decided (n=58).

Career choice	First Choice	Second Choice	Third Choice	N (%)
Surgery	16	21	5	41(70.68)
Orthopedics	12	4	3	19(32.75)
Internal Medicine	18	15	2	35(60.34)
Pediatrics	2	2	10	14(24.13)
Obstetrics and Gynecology	2	2	6	10(13.79)
Anesthesia	5	3	13	21(36.2)
ENT	1	2	2	5(8.62)
Eye	-	-	2	2(3.44)
Dermatology	3	3	2	8(13.79)
Radiology	-	2	4	6(10.34)
Psychiatry	-	4	4	8(13.79)
Pathology	-	-	4	4(6.89)
Total	58	58	58	

Table 2. Reasons for choosing Anesthesia (n=21)

Reason for choosing anesthesia	Number	Percentage
Interested in Critical care	19	90.47
Satisfaction from Immediate Result seen	15	71.42
OT environment	8	38.09
Interested in physiology and pharmacology	8	38.09
Skilled Personnel	3	14.28
Minimum patient contact	12	57.14
No wards/rounds/clinics	7	33.33
Others	5	23.8

The positive key attributes of choosing anesthesiology as their career was mostly because they were interested in critical care- 19(90.47%), satisfaction from the immediate result seen- 15 (71.42 %) and minimum patient contact- 12 (57.14%) (**Table 2**). The negative attributes of anesthesiology highlighted by medical interns were risky job- 23(46.93%), lack of recognition by patient- 13(26.53%) and minimum patient contact- 12(24.48%) (**Table 3**). The biggest influencing factor as a first preference among the participant towards the perception of anesthesiology was the duration of internship rotation highlighted by 52(74.28%)

Table 3. Reasons for not choosing Anesthesia (n=49)

Reason for not choosing anesthesia	Number	Percentage
Risky Job	23	46.9%
Boring Not Interesting	10	20.4
Dependence on Surgeon	10	20.4%
Lack of recognition by peers	6	7.59
Lack of recognition by patient	13	26.53
Minimum patient contact	12	24.48
OT environment	6	7.59
No wards/rounds/clinics	7	14.28
Others	5	10.20

of total participants. It was followed by lectures during final year- 38(54.28%), role model- 22(31.42%) and peers influence- 21 (30%) (Table 4). Overall positive patient outcome (37.14%), financial consideration (35.71%) and societal appreciations (21.42%) seem to be major factors influencing career of an individual (Table 5).

Out of the 70 interns, 43 (61.42%) thought that anesthesia is an established speciality in Nepal. Thirty two (45.71%) agreed anesthesia has limited clinical application, 52 (74.28%) were aware that anesthesia was a medical speciality before entering medical school, 56 (80%) thought pre and postoperative role of anesthesia is as equal as of a surgeon. Surprisingly, 20 (28.57%) thought anesthesiologist act as an assistant to the surgeons and 48 (68.57%) thought the patients undergoing surgery were not appreciative of the services rendered by an anesthesiologist and same numbers thought the exposure of two weeks in anesthesia internship rotation in the medical college was not adequate (Table 6).

Table 4. Influencing factors for the perceptions of medical students about Anesthesiology

Influence factors	First	Second	Third	Total n(%)
Duration of Internship Rotation	31	12	9	52(74.28)
Lectures during final year	10	18	10	38(54.28)
Peers Influence	4	5	12	21(30)
Role Model	12	7	3	22(31.42)
Self Interest	1	2	-	3(4.28)
TV	3	-	-	3(4.28)
Internet	-	2	-	2(2.85)
Family	-	2	2	4(5.71)

Discussion

Anesthesia has been described as one of the most holistic specialties in medicine, in the sense that it is involved in almost all clinical areas in hospital practice.⁴ Surprisingly, it is not the first career option for medical graduates. Various factors influence in choosing anesthesia as a career. Thus, this study was done to learn the perception

Table 5. Influencing factors for medical students to choose their career

Preference	First	Second	Third	N(%)
Duration of Internship Rotation	1	-	1	2(2.85)
Encouraged by Seniors	6	2	4	11(15.71)
Fixed work Hours	14	-	-	14(20)
Intellectual content	6	2	3	11(15.71)
Personal Interest	4	-	2	6(8.57)
Job Security	8	1	2	10(14.28)
Positive Patient Outcome	10	13	5	26(37.14)
Role Model	8	1	2	11(15.71)
Societal appreciation	4	1	10	15(21.42)
Time for leisure and personal lifestyle	6	3	5	13(18.57)
Advice by parents/ relatives	-	7	-	7(10)
Financial Consideration	-	27	1	25(35.71)
Peers Preference	-	1	-	1(1.42)
Teaching Opportunity	-	5	7	12(17.14)
Need for Self Fulfillment	-	1	5	6(8.57)
Research Prospect	-	-	9	7(10)
Employment Overseas	-	-	1	1(1.42)

of medical graduates towards anesthesia. This study was conducted amongst the interns who were posted in the department of Anesthesiology, KIST medical college. A total of 70 students (52 male and 18 female) were asked to fill the questionnaire. Out of 70 students, 21(36.2%) students choose anesthesia as a career after graduation. Among those 21 students, anesthesia was first choice for 05 students, second choice for 03 students and third choice for 13 students. Majority of students chose surgery (70.68%) as their first career option which was followed by internal medicine (60.38%). Anesthesia (36.2%) ranked third amongst all fields which was followed by other specialties like orthopedics (32.75%), pediatrics (24.13%) and gynecology (13.79%). Similar results were seen in other studies where anesthesia was not the first choice.^{5,6} In the study done by Alkhilawi et al the number of medical students who were interested in anesthesia (1%) was significantly less than the other major disciplines in medicine (surgery 38%, internal medicine 22%, pediatrics 15%, family medicine 9.3%).⁷ Similar result was seen in study done by Rehman et al where 50.3% students were inclined towards general surgery and allied subjects.⁵ The quality and duration of medical students' exposure to anesthesiology undoubtedly affected their knowledge and perception of the speciality, as demonstrated by numerous studies in both developing and developed countries.⁶ As students rely on their experience of the specialties as a student to guide their choice of career, limited exposure of students during their training period could be one of the main reason, for student to lack interest in anesthesia. As

Table 6. Questions

Questions	Yes	No
Does the specialty have limited clinical application?	32 (45.71%)	38 (54.28)
Do you think anesthesia is an established speciality in Nepal?	43 (61.42)	27 (38.57)
Were you aware that anesthesia was a medical specialty before entering medical school?	52 (74.28)	18 (25.71)
Do you think that the Intraoperative role of anesthesia is as equal as surgeons?	65 (92.85%)	5 (7.14%)
Do you think that the Pre/post-operative role of anesthesia is as equal as of a surgeon?	56 (80%)	14 (20%)
Do you think the anesthesiologist act as an assistant to the surgeons?	20 (28.57)	50 (71.42%)
Do you think the patients undergoing surgery are appreciative of the services rendered by an anesthesiologist?	22 (31.42)	48 (68.57)
Do you think the exposure of two weeks in anesthesia internship rotation in the medical college is adequate?	22 (31.42%)	48 (68.57)

compared to months of training period in major subjects like medicine and surgery, students are posted for just 15 days in anesthesia. A four weeks clerkship in anesthesia has significantly improved the undergraduate student's attitude towards anesthesia as a speciality.⁸ This mindset also has resulted in maximum number of students opting for major field like medicine and surgery.

When gender was considered, maximum number of male students opted for Medicine (94.44%) which was followed by surgery (87.5%) and orthopedics (100%). Maximum number of female students opted for dermatology (100%), surgery (12.5%), and obstetric/gynecology (100%). Regarding the five students whose first choice was anesthesia, four were male and one was female. The result seen in our study was different from other studies as more female students were inclined to choose this field of specialty. Female students (13.4%) seemed to be more likely to consider a career in anesthesia in comparison to 8.4% of male students in study done by Alkhalawi Rakan et al.⁷ Acceptable hours and working conditions, and a career that fits with their domestic situation were the main reason for female choosing anesthesia.⁴

The scope of work of anesthesiologists has expanded outside the operating room and this can be used as leverage to attract a larger group. As the field of anesthesia is broadening, its branches including critical care, pain management and emergency management, more students are being attracted towards this field. Similar results were seen in our study as 90.47% students were interested in critical care. This was in contrast to other studies as interest in critical care ranked third in study done by Khan et al.⁹ Economic stability was the primary factors for students to choose anesthesia in India.¹⁰ General interest in the specialty and the nature

of work was the most common reasons cited for choosing anesthesia in a study done in Pakistan.⁹ The challenging nature of the specialty, immediate results, skill based, focus on clinical application of basic sciences, and less patient contact were the main highlights of choosing anesthesia. Similar findings were seen in our study as well. Satisfaction from immediate result ranked the second reason (71.42%) and minimal patient contact ranked the third (57.14%).

An anesthesiologist is generally known as the person behind the curtain, as a result of which direct contact of the patient with the doctor is limited. This was rather considered as a factor favoring for anesthesia rather than against it. Risky nature of job of an anesthesiologist was the main reason for the students not to choose anaesthesiology (46.9%). Lack of recognition by the patient (26.53%) ranked second and minimum patient contact (24.48%) were second and third factors which was followed by dependence on surgeon (20.4%) and mundane nature of work(20.4%). Similar findings were seen in study done by Tyagi A et al in which perceived lack of a doctor–patient interaction in the speciality as evident by the doctor–patient relationship was not being a consideration for 74% of students.¹⁰

Work of an anesthesiologist is considered to be very risky as they have the life of the patient in their hands and have to operate under different critical conditions in scheduled and emergency situations. In a study done by Nysen AS et al, the median stress level in anesthesiologist measured with the PSSM-A was 50.6 (range 34.5–74.0).¹¹ In one of the studies which was conducted amongst post graduate students in India, about 68.4% of students did not have difficulty in accommodating the demands of challenging job whereas 31.6% of students found it difficult. Thus, 21.6% of students had to make psychosocial adjustments to accommodate the demands of their challenging job, 4.2% of students required counselling from peers/parents, 3.8% went into depression and 2% of students considered psychiatry opinion/medications. 83% of the depressed were male students.¹² At the same time anesthesia is considered as a “thankless job” where the efforts put by an anesthesiologist in patient management is usually unnoticed. Similar result was seen in our study where

Table 7. Gender variation according to subject

1st Priority subject	Number	Male		Female	
		N	%	N	%
Surgery	16	14	87.5	2	12.5
Medicine	18	17	94.44	1	5.55
Pediatrics	2	1	50	1	50
Orthopedics	12	12	100	0	0
Anesthesia	5	4	80	1	20
Obs and Gynae	2	0	2	100	
Dermatology	3	0	3	100	
Ent	1	0	1	100	

26.53% students did not choose anesthesia due to lack of recognition by patients.

In our study, the primary influencing factor for choosing a career was a positive patient outcome (37.14%) which was followed by financial consideration (35.71%), societal appreciation (21.42%) and time for leisure and personal lifestyle (18.57%). Similar results were seen in the study done by Tyagi A, where economic factor was of prime importance. Rehman A et al highly considered factors influencing specialties chosen by more than 70% of the medical students were: applicable to respective personalities of the individuals, prestige and respect, international opportunities, and time commitment. Surgical-skills, job availability, financial rating, academic performance, and a role model were moderately influencing factors (50-70%).^{5,10}

Studies have suggested that controllable lifestyle has become a determinant in student's criteria for the selection of specialties.^{13,14} A controllable lifestyle is characterized by personal time free of practice for leisure, family, and vocational pursuits, and control of total weekly hours spent on professional responsibilities.¹⁵ Controllable lifestyle was important to 55% of the participants in considering a specialty in medicine whereas in our study it was important

to only 18.57% students. Influence by seniors was present in only 15.71% students. Similar result was seen in study done by Alkhalawi RM et al where positive role models such as faculty members in a residency program have a significant influence on only 43.6% of participants.⁷ Similarly, study done by Khadar Y found that only 11.1% of medical students considered the advice of a faculty member.¹⁶

One of the limitations of our study is that it is a single institutional study so this cannot be generalized to all the medical graduates.

Conclusion

In conclusion we found that medical graduates were considering anesthesia as an emerging career option. Anesthesia has expanded its horizon to critical care which is attracting the young graduates. As duration of posting has its direct impact, institution should increase the number of days for the posting.

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