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Original Research Article

Factors considered by junior residents in selecting anesthesia as a career choice and stress levels amongst the anesthesia postgraduate students: A questionnaire-based study

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ABSTRACT

Background: Anaesthesiology today is a vast speciality in medical science. In a healthcare setting, the expectations of teachers, parents, and patients augment the stress experienced by postgraduate trainees and registrars due to their hard workload, long duty hours, night shift, limited vacation time, insufficient sleep and food, and study.

Aim & Objectives: The study aims to assess factors influencing the selection of anaesthesia as a speciality choice and to assess stress levels while working as a postgraduate in anaesthesia.

Materials and Methods: A questionnaire-based study was done among 265 junior anaesthesia residents for 2 months. A semi-structured was used to collect the data. Data were statistically analyzed using IBM SPSS statistics version 20.

Results: Of 265 participants, most participants lie in the age group of 26-35 years (82.3%) with a mean age of 28±4 years and the least in >35 years (5.3%). Most of the participants in the current study are females (54.3%), and the rest are males (45.7%). 177 (81.2%) were MD postgraduates with stress and DNB postgraduates (80.9%). However, there was no significant association between the post-graduation degree and perceived stress. Most women students reported statistically significant stress.

Conclusion: Anaesthesiologists need to emphasize the positive aspects and scope of the speciality outside the operating room, like trauma, critical care and pain management.

1. Introduction

Psychological stress is very likely to affect several medical specialities.[1] On the one hand, stress may be helped when handled with the right cognitive approach and coping mechanisms.[2] The career decision is complicated and may be impacted by intrinsic and extrinsic circumstances. The topic has significant consequences for national workforce planning and future recruitment tactics in a field of medicine that is reportedly not a popular choice among medical students in both emerging developed nations. It is also a crucial component in selecting the postgraduate student allocation for specialization by academic institutions and governmental organizations.[3]

Today, Anaesthesiology spans a wide range of medical disciplines, with subspecialties in critical care, trauma care, pain management, palliative care, and perioperative patient care. It is one of the most demanding medical specialities, subjecting doctors to demanding duties and stressful situations like daily handling of life-threatening crises. Moreover, because tasks involve working weekends, holidays, and midnight shifts, the work schedule may

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be seen as more stressful than in other medical specialities.[4] Previously restricted to the operating room, the speciality of anesthesiology has expanded to cover ICU management, trauma, and acute/chronic pain management.[5] However, the advancement of medical care and demands revealed a huge shortage of anesthesiologists.[6] Although the broad scope of this field, very few undergraduate medical students express interest in choosing anesthesiology as their postgraduate specialization.

In a healthcare setting, the expectations of teachers, parents, and patients augment the stress experienced by postgraduate trainees and registrars due to their demanding workload, long duty hours, night shift, limited vacation time, insufficient sleep and food, and study.[7] The lack of a set cap on the number of working hours, the high patient-to-doctor ratio, and the poor infrastructure in developing nations all harm residents receiving training there. For training and enhanced performance, a specific stress level may be desirable. However, the ongoing chronic stress may put these young physicians at risk for burnout syndrome, which is bad for the residents with the larger patient population they manage.[8] According to the research, residents working in the anaesthesia and surgical branches get mentally exhausted due to the small margin of error and deadly complications in surgical patients.[9,10]

Although a high frequency of stress among medical practitioners who practise anaesthesia would not be unexpected, we conducted this study to assess junior residents' factors that influenced them to select anaesthesia as a speciality choice and stress levels while working as a postgraduate in anaesthesia.

2. Objectives

The primary objective is to assess factors influencing the selection of anaesthesia as a speciality choice and to assess stress levels while working as a postgraduate in anaesthesia.

3. Materials and Methods

3.1. Study type

Prospective observational study.

3.2. Source of data

After obtaining informed consent, the data was collected from the anaesthesia Junior Residents studying across the Medical colleges/DNB Hospitals in Karnataka.

3.3. Duration of study

The study was done from May 2022 to July 2022.

3.4. Method of collection of data

A validated, self-administered electronic questionnaire was used to collect the data. The questionnaire consists of sociodemographic characteristics such as age, gender, and the year of study. The information about the scope and awareness of the Department of Anesthesiology was included in the study. It has a portion where factors influencing the selection of anesthesiology were included. Participants were also assessed for their perceived stress after joining the department. The questionnaire was distributed through emails and online social networking platforms among participants.

3.5. Sample size

The sample size was calculated by using openEpi info version 3.01. By taking a proportion (considering interest as a choice) of 42.8% from a study. The sample size calculated was 265 at a 90% confidence level and 5% precision.

$SS = z^2pq/ d^2$ for proportion.

3.6. Sample size

265.

3.7. Inclusion criteria

Junior residents of anaesthesia.

3.8. Exclusion criteria

Anaesthesia junior residents who were not willing to participate in the study.

3.9. Statistical analysis

Data were double-entered by two operators and were statistically analyzed using IBM SPSS statistics version 20 (Statistical Package for Social Science, IBM 2011). Percentages were computed for categorical outcomes, and mean and standard deviation for numerical outcomes.

4. Results

The demographic and educational details of the study participants are given in Table 1.

While most of the participants had chosen Anaesthesiology because it was interesting and lifesaving (Figure 1), 92.1% of the participants also felt that it was a challenging and upcoming branch with many opportunities. Majority of the participants (67.9%) were aware of the scope of anesthesiology before they joined the stream. About 24.9% (66) were interested in anesthesia, while 10.5%(28) were interested in critical care. About 64.5%(171) of participants were interested in both anesthesia and critical care.

Table 1: Demographic characteristics of the study participants (n=265)

Demographic characteristics		n	%
Age (in Years)	<25	33	12.5
	26 - 35	218	82.3
	>35	14	5.3
Sex	Male	121	45.7
	Female	144	54.3
Post-graduate degree	DNB	47	17.7
	MD	218	82.2
Post-graduation year	1^{st} Year	95	35.8
	2^{nd} Year	34	12.8
	3^{rd} Year	136	51.3

Good job opportunites, income and research opportunities had prompted some participants to take up the speciality. It was also found that Anesthesia, being a speciality in which direct patient contact and the need for superspeciality is less compared to other specialities, also attracted the participants. Lack of other opportunities (in PG counselling) and financial constraints had also led some participants to chose the subject. While 33.2% were influenced by their family, friends or senior medical students, about 30% participants were inspired by the undergraduate training that they had received to take up the speciality. However, most participants (82.3%) were not satisfied with the quality of their undergraduate Anaesthesia teaching. Similarly, during their internship, most participants did not have good hands-on clinical skills exposure (Intubation, CPR, performing ABGs) in Anesthesia Department.

Among the 265 participants, 175 (66%) reported that they were able to accommodate to the demands of the work and challenges in Anesthesia residency easily. About 81% (215) participants reported that they perceived work related stress during residency.

There was no significant association between the post-graduation degree and the ease of accommodation to Anaesthesia speciality (χ2=0.000, df=1, p=0.990). Similarly, there was no significant association between gender and the ease of accommodation to Anaesthesia speciality (χ2=3.413, df=1, p=0.065).

There was no significant association between the post-graduation degree and the stress perceived (χ2=0.003, df=1, p=0.956). However, there was significant association between the gender and stress in Anaesthesia speciality (χ2=25.977, df=1, p=0.000). Significantly higher proportion of women reported as having stress compared to men.

5. Discussion

There are several factors which can affect professional career choices. These may be intrinsic (personal attributes) or extrinsic (local medical, environmental effects).[11] Other factors like curriculum, primary care experiences, and faculty role models operating before, during and after medical school are involved in any individual's career decision. We focus on factors influencing postgraduates to take up anesthesiology as a career choice and their perceived stress while working in the field.

5.1. Sociodemographic characteristics

In the current study, most participants lie in the age group of 26-35 years. Most of the participants in the current study are females (54.3%), and the rest are males (45.7%). 82.6% of the participants are pursuing MD, and 17.4% are from DNB. The study by Rakan M. AlKhilaiwi et al. and Yousef Khader et al. also reported the interest among females in the field of anaesthesia.[6,12]

5.2. Scope of anaesthesiology

Most male participants (71.9%) know Anaesthesiology's scope before choosing it. Similarly, 64.6% of the female participants were aware of the scope of Anaesthesiology before choosing it. 66.9% of the male participants mentioned that they are interested in both specialities. Similarly, most female participants mentioned that they were also interested in both specialities.

5.3. Reasons for selecting anaesthesia as a career

Either in medical school or during the internship when career decisions are determined.[13] The undergraduate curriculum's exposure to a sub-speciality may majorly impact a medical graduate's preference for a job, even though other factors may also play a role. It's also not a need that a liking for a specialization results in training in that specialization, but it might affect a person's outlook and level of job satisfaction.[14] In our study, most participants mentioned the reasons for choosing Anaesthesiology as a career as it is an interesting and lifesaving speciality (98.5%). 92.1% of the participants mentioned it is a challenging and upcoming branch with many opportunities. 85.7% of the participants stated that the job opportunities

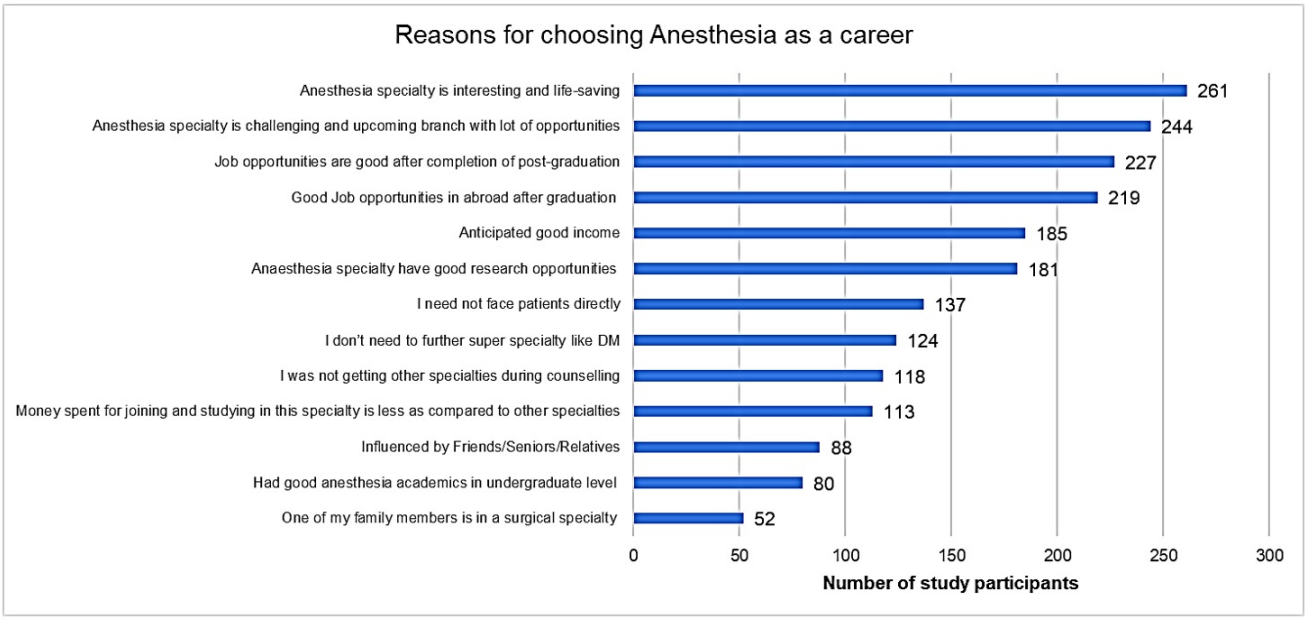

Fig. 1: Reasons for selecting anaesthesia as a career (n=265)

Table 2: Post graduation * Accommodating to challenges in Anaesthesia residency was easy as per MD/DNB/Gender

Participant characteristic	**Accommodating to challenges in Anaesthesia residency was easy (N=265)**		**Chi Square(df, p value)**
Post graduation degree	**Yes**	**No**	
MD (%)	144 (66.1%)	74 (33.9%)	χ^2=0.000 (df=1, p=0.990).
DNB (%)	31 (66.0%)	16 (34.0%)	
Gender	**Yes**	**No**	
Male	87 (71.9%)	34 (28.1%)	χ^2=3.413 (df=1, p=0.065).
Female	88 (61.1%)	56 (38.9%)	
Participant characteristic	**Perceived stress of challenges in Anaesthesia residency (N=265)**		**Chi Square(df, p value)**
Postgraduation degree	**Yes**	**No**	
MD (%)	177 (81.2%)	41 (18.8%)	χ2=0.003 (df=1, p=0.956)
DNB (%)	38 (80.9%)	9 (19.1%)	
Gender	**Yes**	**No**	
Male	82 (67.8%)	39 (32.2%)	χ2=25.977 (df=1, p=0.000)
Female	133 (92.4%)	11 (7.6%)	

are good after completion of post-graduation. Most of them have also cited (69.8%) that they had a good anticipated income after the course completion in this speciality. 46.8% of the participants thought they did not need a different super speciality like DM. Previously conducted evaluated various factors to consider to choose anesthesiology and found varied results. Our findings are comparable to Yousef Khader et al., Priya Saigal et al., and Agnieszka Pawełczyk et al. study, which reported that most participants considered a Specialty reputation to choose the field. [12,15,16]

5.4. Accommodating challenges in anaesthesia

In our study, most MD postgraduates mentioned that accommodating challenges in Anaesthesia was easy (66.1%), and 33.9% of them mentioned it was not easy. Similarly, DNB postgraduates mentioned that accommodating challenges in Anaesthesia was easy (66%), and 34% mentioned it was not easy. In our study, there was no significant association between the post-graduation degree and the ease of accommodation to the Anaesthesia speciality.

5.5. Association between gender and accommodation of challenges of anesthesiology

There was no significant association between gender and the ease of accommodation to the Anaesthesia speciality. In the current study, most (71.9%) of the male participants mentioned the accommodation was easy, and 28.1%

mentioned it was not easy. Similarly, most females (61.1%) also mentioned that accommodation is easy, and 38.9% stated it is not easy.

5.6. Perceived stress among postgraduate students

Stress among doctors in every speciality has a significant impact on them. Even during the best times, taking care of patients, making quick choices, and juggling administrative tasks may be demanding. Anesthesiologists feel several pressures.[17] In the current study, among 177 (81.2%) MD postgraduates with stress and similarly DNB postgraduates (80.9%). However, there was no significant association between the post-graduation degree and perceived stress. A previous study by Kamat et al. also reported high-stress levels among postgraduates from Anaesthesiology.[3]

5.7. Association between gender and stress

The inconsistent relationship between gender and stress among medical students may be due to disparities in the social and educational environments and subjectivity in the self-reported stress measurement process. There may be different campuses for male and female students, each with its educational and recreational resources.[18,19] Women are more likely to perceive challenging and threatening events as stressful than men, as suggested by some authors.[20] There was a significant association between gender and stress in the Anaesthesia speciality. In the current study, most male participants had stress (67.8%). Similarly, 92.4% of the female participants had stress. A significantly higher proportion of women reported having stress compared to men. In concordance with our study, Abdalla A. Saeed et al. also reported that females complain of having more stress than male medical students.[21]

6. Conclusion

The benefits and range of the speciality outside operating rooms, such as trauma, critical care, and pain management, must be highlighted by anesthesiologists. The number of emergency night shifts per week, the number of working hours per day, the consideration of a post-duty day off, good operating room assistance, maintaining a positive work environment, and teacher consideration of counselling if a student is found to be weak or depressed are all measures that should be taken to help reduce occupational stress and improve efficiency and job satisfaction among anaesthesia postgraduate students.

7. Recommendation

All faculty members must give all undergraduates a taste of what it's like to work as a full-time anesthesiologist, intensivist, or pain specialist. More research is required to identify which preventative measures may lower the likelihood of professional stress among anesthesiologists.

8. Source of Funding

None.

9. Conflict of Interest

None.

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Author biography

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Survey questionnaire

Kindly answer by selecting the appropriate option.

Post-graduation: DNB/Masters, Post graduation Year - I/II/III

Age - _____ years, Sex - M/F

1. Were you aware of the scope of Anesthesiology prior to choosing Anesthesiology as a career (At the time of medical post graduate counselling). **a.** Yes **b.** No

2. What are the factors influenced to select Anesthesiology as a career?

a. I am interested in this specialty (Anaesthesia/Critical care/both, please tick) **a.** Yes **b.** No **c.** Both

b. Anesthesia specialty is interesting and lifesaving. **a.** Yes **b.** No

c. Anesthesia specialty is challenging and upcoming branch with lot of opportunities. **a.** Yes **b.** No

d. Had good anesthesia academics in undergraduate level? **a.** Yes **b**. No

e. Had good hands on clinical skills exposure (Intubation, CPR, performing ABGs) in Anesthesia Department during internship? **a.** Yes **b.** No

f. I was not getting other specialties during counselling. **a**. Yes **b**. No

g. Money spent for joining and studying in this specialty is less as compared to other specialties. **a.** Yes **b**. No

h. Job opportunities are good after completion of post-graduation. **a.** Yes **b.** No

i. Anticipated good income. **a.** Yes **b.** No

j. I don't need to further super specialty like DM. **a.** Yes **b.** No

k. I need not face patients directly. **a.** Yes **b.** No

i. Influenced by Friends/Seniors/Relatives. **a.** Yes **b.** No

m. One of my family members is in a surgical specialty. **a**. Yes **b**. No

n. Good job opportunities in abroad after graduation. **a**. Yes **b**. No

o. Anaesthesia specialty have good research opportunities. **a**. Yes **b**. No

p. Others (specify) _____

3. After joining Anesthesiology, I feel

a. It is an interesting specialty and I want to continue in the same field, **b**. It is an interesting specialty and I want to do super specialty in anaesthesia, **c.** It Is a difficult/boring subject, given a chance I would like to change the specialty, **d.** Others (Specify) _____

4. **Accommodating the demands of challenging job, after joining Anesthesiology, it was not difficult, I could accommodate easily**? **a**. Yes **b**. No **c.** Other

5. Accommodating the demands of challenging job, after joining Anesthesiology, It was difficult to accommodate demands of challenging job in the form of

a. I had to make lot of psychosocial adjustments, **b.** I required counselling from peers/parents/spiritual guides, **c.** I went into depression, **d.** I went into depression and considered psychiatry opinion/medications, **e**) Others (Specify) _____

6. **Do you feel stressed during period of post-graduation? a**. Yes **b**. No

7. If yes, the reasons are

a. Mental stress like _____, **b**. Physical stress like _____, **c.** Unreasonable demands from senior postgraduates, **d.** Unreasonable demands from teachers, **e**. Vast syllabus, **f.** Others (specify)_____

8. What do you think needs to be done to attract more doctors and create awareness about this specialty amongst undergraduates and interns?

a. Anesthesiology should be a separate subject during the course of under graduation, **b.** Increase in duration and vocational content of undergraduate exposure to anaesthesia, **c.** Compulsory clinical rotation in anaesthesia during internship to attract more doctors to the specialty, **d.** Others (Specify) _____