Anaesthesia Section

Motivational Factors and Training Aspects in Postgraduate Students of Anaesthesiology: A Survey

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ABSTRACT

Introduction: Anaesthesiology is a fast growing branch of medicine. There is marked shortage of anaesthesiologists in India and this hinders the growth of surgical and interventional specialities which hinges on well-trained, enthusiastic anaesthesiology support. Exploring the perceptions about the speciality among Postgraduate (PG) students could help in planning strategies to make a career choice in anaesthesiology look more attractive.

Aim: To explore the motivational factors for the choice of anaesthesiology for postgraduation, various aspects of PG training, stress among PGs and satisfaction with career choice in order to delineate the perceptions about the speciality among the medical graduates and to find out avenues for improvement to make the speciality more attractive.

Materials and Methods: A cross-sectional questionnaire-based survey was distributed among 300 PG students in anaesthesiology who attended various national level conferences in India and state level conferences in Kerala between November 2015 and March 2018. Data collected was statistically analysed using R software version 3.1. All the quantitative variables were summarised as mean±SD (Standard Deviation) or median with IQR (Inter Quartile Range) depending

on the distribution. Qualitative variables were summarised as proportions. Association between factors was analysed using Chi-square test or Fisher's-exact test.

Results: Anaesthesiology was the first career preference for only 34.63% (n=88) of the participants. Predominant reasons for choosing anaesthesiology included unavailability of other specialities (32.8%, n=82) and good job opportunities without need of super specialisation (32%, n=80). After joining anaesthesiology, majority (68%, n=175) were satisfied with their career choice. Satisfaction with PG training, assessed by the Likert scale was high among the participants and majority suggested improvements especially in theory classes, case discussions and simulation. Stress was experienced by 60% (n=154) of participants ascribed mainly due to lack of time for academics due to high workload.

Conclusion: Improving awareness among public health professionals and medical students and increasing Undergraduate (UG) exposure to the subject would increase the proportion of students joining anaesthesiology with genuine interest and improve the recruitment profile. Modifications in training and measures to reduce stress during training should also be considered.

Keywords: Anaesthesia trainees, Aptitude, Career choice, Professional satisfaction, Stress, Work load

INTRODUCTION

The field of anaesthesiology has made phenomenal advances with the outreach and scope of the subject touching new boundaries and diversifying out to newer domains [1]. But still the scarcity of adequate number of trained anaesthesiologists to cope up with the increasing demand continues. A global workforce survey was conducted by the World Federation of Societies of Anaesthesiologists (WFSA) during 2015 and 2016 to collect detailed information on physician anaesthesia provider and nonphysician anaesthesia provider numbers, distribution, and training [2]. They found marked disparities in the number of anaesthesia providers between countries categorised according to gross national income. India, unfortunately finds its place among the countries with low ratios having only one trained anaesthesiologist per 100000 population. There is a long way to go to reach the benchmark of 10 per 100000 populationthe target set by the Lancet commission on Global Surgery for 2030 in order to achieve the goal of "universal access to safe, affordable surgical and anaesthesia care" [3].

This lacunae in skilled workforce has now been brought to an even more glaring focus as the world is battling from the COVID-19 pandemic of unseen proportions with the anaesthesiologist being placed in the forefront of the struggle. It has become all the more relevant that the anaesthesia workforce be improved both in terms of numbers and training, which can be realised by attracting more enthusiastic candidates to pursue anaesthesiology as a career.

The students most often base their experience of specialities during the UG period to guide their career choice [4]. In order to make this speciality more appealing to the aspiring PG it becomes necessary to delineate the perceptions about the speciality among those who have chosen it for their careers with a focus on identifying the factors which can attract more doctors to make a career choice of anaesthesiology so that the overall interest in the speciality is improved.

The primary objective was to explore the motivational factors resulting in a choice of anaesthesiology for PG study along with examining various aspects of training to find out avenues for improvement. Stress during the training period, its reasons and how well the anaesthesia trainees were able to cope with the demands of the speciality were also assessed. As a secondary objective, stress, satisfaction with career choice and PG training among those who selected anaesthesia as a first choice and others who did not were compared.

MATERIALS AND METHODS

A cross-sectional questionnaire-based survey was undertaken after obtaining clearance from the Institutional Ethics Committee (GMCKKD/RP2015-16/IEC/11/27-11). The survey was conducted among PG students in anaesthesiology from different institutions all over India who attended various national level conferences in India and state level conferences in Kerala between November 2015 and March 2018 (CAAP 2015-Calicut, ISACON 2015-Jaipur, Resuscitation 2015-Thrissur, RACE 2016-SRMC Chennai, BARC-BMH Calicut,

ISAMIDKON 2018 -Perinthalmanna, Kerala). Participants were selected on the basis of their availability and willingness to participate. Duplication of study subjects was avoided by excluding those who had already participated in the study. Those who had given mostly incomplete responses were also excluded from the study. Necessary official permission was sought and obtained from the event officials. Confidentiality and anonymity of the participating subjects was guaranteed throughout the study.

The data was collected using a peer reviewed, internally validated questionnaire, distributed among the subjects of the study after obtaining verbal consent. The questionnaire (25 questions) covered demographic data, data related to the choice of anaesthesia, various aspects of PG training, future career plans and suggestions to improve the speciality based on their perceptions [Annexure 1]. Questions were formulated as single response, multiple responses from a choice of options and open-ended responses. These were selected on the basis of literature reviews, discussion with senior anaesthesiologists and pretested on PGs from our institution.

The first part of the questionnaire dealt with preference of specialities, satisfaction with career choice and reasons for choosing anaesthesiology which was given as multiple options from which they could select one or more options.

Satisfaction with PG training was elucidated by a 5-point Likert scale. Factors which required improvement in training, presence of stress during training period, its reasons, ability to cope with the demands of the speciality and participation in research activities (publications, paper/poster presentations) were also assessed.

The latter part of the questionnaire considered future career plans, and suggestions to make the speciality more attractive. The ability to communicate effectively with surgical colleagues was asked as a self-assessment question. Finally, open ended questions on what they 'like or dislike most about the speciality' explored their broader perceptions. To all the multiple response questions participants could also provide any other response not specified among the options.

STATISTICAL ANALYSIS

The data collected were entered by two operators and was statistically analysed using R software version 3.1. All the quantitative variables were summarised as mean±SD or median with IQR depending on the distribution. Qualitative variables were summarised as proportions. Chi-square test was used to analyse the association between choice of anaesthesia and satisfaction with career choice, stress during PG training and ability to adjust to demands of speciality and Fisher's-exact test for satisfaction with PG training.

RESULTS

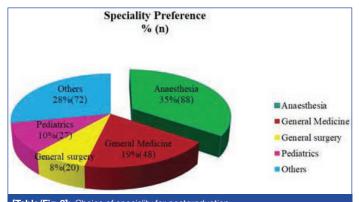
Questionnaires were distributed among a total of 300 PGs out of which 278 returned after filling the questionnaire. After further excluding 21 response sheets which were mostly incomplete, 257 were included for the final analysis. The demographic characteristics of the respondents are summarised in [Table/Fig-1]. Only 39 (15.18%) participants had any prior experience in anaesthesia.

Only 88 respondents (35%) had anaesthesia as first choice for postgraduation [Table/Fig-2]. The more popular other first choices were general medicine (19%, n=48), paediatrics (10%, n=27) and general surgery (8%, n=20). There was no significant association between gender and choice of anaesthesia (Chi-square p-value 0.63) [Table/Fig-3]. The reasons for choosing anaesthesia as PG subject was assessed by multiple response question [Table/Fig-4]. The most common reasons were "the only speciality (clinical) available in their counselling" (32.8%, n=82), "super specialisation is not a must for job opportunities" (32%, n=80) and "sense of control and immediate work results (29.2%, n=73)". Among those whose first choice was anaesthesia (n=88) the key reasons for choosing included "genuine interest in the speciality/always wanted to be an anaesthesiologist" (44.3%, n=39) and "dislike of OP/ward work (35.2%, n=31)."

Participant characteristics	n (%)
Gender	
Male participants	144 (56)
Female participants	113 (44)
Age (years)	
20-30	214 (83.3)
31-40	41 (16.9)
41-50	2 (0.8)
Marital status	
Married participants	131 (51)
Surgeon spouses	34 (13.2)
Non surgeon doctor spouses	65 (25.3)
Non doctor spouses	32 (12.5)
Unmarried	126 (49)
Institution of MBBS training	
Government	133 (51.8)
Private	124 (48.2)
Institution of postgraduation	
Government	109 (43.4)
Private	148 (57.6)
Postgraduation course	
MD	149 (58)
DNB	63 (24.5)
DA	45 (17.5)
Year of postgraduation	
First year	21 (8.3)
Second year	116 (45)
Third year	120 (46.7)

[Table/Fig-1]: Characteristics of the participants.

*Number of participant postgraduate students; n=257



[Table/Fig-2]: Choice of speciality for postgraduation.

*Total respondents 255; two didn't mention speciality preference; Data given as % (n) of participants

After joining anaesthesia 68% (n=175) were satisfied with their career choice and 28% (n=72) responded as satisfied to some extent. Among the participants whose first choice was anaesthesia the satisfaction was higher with 87.4% (n=76) responding satisfied [Table/Fig-5]. The satisfaction was significantly different between the groups as identified by Chi-square test (p-value <0.001).

Overall satisfaction with training was assessed using Likert scale from 1 to 5 in which 1 is 'least happy' and 5 is 'fully satisfied'. Majority responded at the fourth level (52.6%, n=134) and the median level (IQR) is 4 (3,4). There was no significant association between satisfaction with PG training and having anaesthesia as the first choice (Fisher's-exact p-value=0.303) [Table/Fig-3].

In response to suggestions to improve PG training, approximately 60% proposed need for improvement in theory classes, case discussions and simulation [Table/Fig-6].

	First choice anaesthesia n (%)			
Variables	Yes	No	p-value	
Gender				
Male	51 (36)	91 (64)	0.00*	
Female	37 (33)	76 (67)	0.63*	
Satisfaction with PG training (Likert Scale)				
1	1 (1.14)	2 (1.21)		
2	3 (3.41)	15 (9.09)	0.303 [†]	
3	26 (29.55)	56 (33.94)		
4	50 (56.82)	83 (50.30)		
5	8 (9.09)	9 (5.45)		
Stress during post-graduation				
Yes	43 (48.86)	81 (48.5)	0.984*	
To some extent	10 (11.36)	18 (10.78)		
No	35 (39.77)	68 (40.72)	1	
Ability to adjust to demands of speciality				
Yes	79 (91.86)	146 (88.48)	0.405*	
No	7 (8.14)	19 (11.52)	0.405*	
[Table/Fig-3]: Choice of anaesthesia and its associations.				

	n	%
Genuine interest in the speciality/always wanted to be an anaesthesiologist	50	20
Inspiration from under graduate exposure/previous work experience in anaesthesia	42	16
Felt that it is less hectic when compared to other specialities	61	24.4
The only speciality (clinical) available in my counselling	82	32.8
Opportunity of overseas placement/financial prospects	47	18.8
Inspired by a role model in anaesthesia	30	12
Advise from family members/others	62	24.8
Dislike of OP/ward work	52	20.8
Spouse is in surgical speciality	14	5.6
Sense of control and immediate work results	73	29.2
Fascination with the technical aspect of the speciality (Ventilator, Machine etc.,) and oppurtunity to do procedures	65	26
Aptitude towards super specialisation like cardiac/neuro anaesthesia, critical care, pain	65	26
Super specialisation is not a must for job opportunities	80	32
Expense incurred for joining this speciality is less compared to others	25	10

[Table/Fig-4]: Reasons for choosing anaesthesiology.

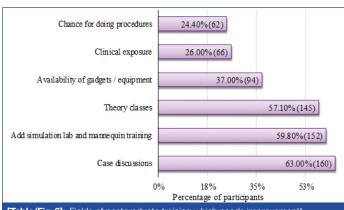
*Respondents 250 Data given as % (n) of participants who selected the option; Responses tabulated from single/multiple reasons selected by each participant

	First choice anaesthesia		
Satisfaction with career choice anaesthesia*	Yes [†]	No ^{††}	
Yes	76 (87.36)	97 (58.79)	
To some extent	10 (11.49)	62 (37.58)	
No	1 (1.15)	6 (3.64)	

[Table/Fig-5]: Association of satisfaction with career choice of Anaesthesia and preference.

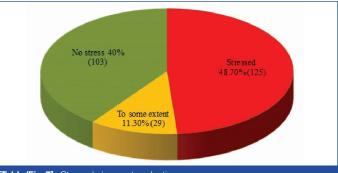
*Chi-square test (p-value <0.001); Data given as n (%) of participants who selected the option; *Percentages calculated from data obtained from 87 participants who responded to the questions of first preference anaesthesia (Yes) and satisfaction with career choice; **Percentages calculated from data obtained from 165 participants who responded to the questions of first preference anaestheisa (No) and satisfaction with career choice

Majority of the participants (60%, n=154) reported that they were experiencing stress during PG course [Table/Fig-7]. There was no significant association of stress during PG training with anaesthesia being the first choice or not (Chi-square p-value=0.984) [Table/Fig-3]. The most common reason for stress was lack of time to study because of working hours and case load (60.4%, n=140) followed by vast syllabus (46.9%, n=109). Most of the participants (73.5%,



[Table/Fig-6]: Fields of postgraduate training which needs improvement*.

*Data given as % (n) of participants who selected the option; Responses tabulated from single/multiple reasons selected by each participant; Total participants who responded to the question was 254



[Table/Fig-7]: Stress during postgraduation.

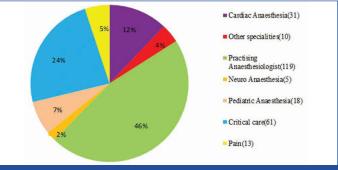
Data given as % (n) of participants who selected the option; All participants (257) responded to this question

n=189) maintained good communication with surgical colleagues at work place.

Of the 253 participants who responded to the question about the ability to adjust to the demands of speciality, majority were able to adjust to the demands of speciality (88.3%, n=227). There was no significant association of reported ability to adjust to the demands with anaesthesia being the first choice (Chi-square p-value=0.405) [Table/Fig-3].

Participation in paper/poster presentations was 52.3% (n=134) whereas only 21.79% (n=56) were a part in research publications.

As future career plans the most common option selected was to continue as a practising anaesthesiologist (46%, n=119) followed by specialisation in critical care (24%, n=61) [Table/Fig-8].



[Table/Fig-8]: Future career plans.

All participants (257) responded to this question

Majority of the participants (82.49%, n=212) would recommend anaesthesia to others as a good career option. Suggestions to make anaesthesia more attractive to graduates were given by 219 participants. The most common (66.2%, n=145) suggestion to this multiple response question was to increase the duration and practical exposure of UG training and 42% (n=92) suggested that anaesthesiology be made a separate subject of UG course. Open end responses were elicited to what the participants liked most and disliked most about the speciality. The responses are summarised

in [Table/Fig-9,10]. Critical care aspect of the speciality with ability to save lives was the most liked aspect while lack of recognition emerged as the most disliked factor.

Comments	Number (n*)
Critical care, life saving aspect	69
Sense of control, immediate job satisfaction, eternal vigilance	42
Vast knowledge over multiple specialties, fascinating subject, Varied patient age group	31
Providing pain relief and patient satisfaction	26
Challenging nature, adrenaline rush	20
Procedural skills, technical aspect	17
Less patient interaction/ward rounds, likes OR† environment	14
Better working hours, more family time	10
Complete doctor, masked superhero, multitasking, gets to do independent tasks and decision making	7
Less financial investment, good professional prospects	5

[Table/Fig-9]: Participants comments on 'Like most about Anaesthesiology'.

*Total respondents: 241; *Number of respondents; †Operating Room; Data elicited as single open ended response

Comments	Number (n*)
Lack of recognition, underestimated, behind the curtain, 'thankless job', blame when things go wrong	50
Lack of understanding and dominance by surgeons, frictions during case postponement, poor workplace morale	33
Dependent speciality, subservient attitude, poor work satisfaction	28
Stressful, more demanding, risks involved, no margin for error	27
Monotony of repetitive tasks	26
Long hours, strenuous night duties, interferes with family time	24
Inadequate remuneration, doubt about future prospects	14
Vast syllabus, need of constant updation and technical know-how	8
Risk in handling expensive equipments, unavailability of latest gadgets, feels more like a technician	5
Confined to OR, exposure to radiation and gases	5

[Table/Fig-10]: Participants comments on 'Dislike most about Anaesthesiology'. *Total respondents-220; "Number of respondents; Data elicited as single open ended response

DISCUSSION

The practice of anaesthesiology has made brilliant strides over the past many years redefining roles from a basic anaesthesia provider to a perioperative physician and encompassing myriad domains including critical care, acute and chronic pain management, trauma, handling advanced monitoring devices for critical diagnosis and catering to a wide spectrum of ages [5]. But many of the medical graduates are still unaware of the vast scope and outreach of the speciality, as it still continues to be low in the list of career choice preferences.

A systematic review on studies based on surveys of career choices of medical graduates across the world from 2010 to 2020 conducted by Levaillant M et al., found out that anaesthesia ranked fifth in the list with surgery and internal medicine being the most sought-after disciplines [6]. The results from studies among Indian graduates are even worse with anaesthesiology not even figuring amid the first ten preferences [7,8]. Among the respondents in the present survey only 35% had opted for anaesthesia as their first choice. The most preferred specialities were general medicine, paediatrics and general surgery. These are the clinical specialities to which the medical graduates are most exposed to during their course period and it has been documented in many studies that UG exposure forms a significant influence in career choice [9,10]. Thus, lack of awareness about anaesthesiology may have contributed to it being low in the list of preferences. Turner G et al., found that there was an increase of fresh graduates opting for a career in anaesthesiology

after including anaesthesia, resuscitation and intensive therapy in the UG curriculum [11].

Career preferences are moulded by a complex interplay of factors which include those related to intrinsic personality traits, external influences or maybe just circumstantial [10]. Cannon D in his famous treatise on modern work ethic commented that employment is considered more in transactional terms and career aspirants are always on the lookout for a better deal rather than following a genuine interest [12]. Life style and work-life balance along with gender surfaced as the most influential factors dictating career choices in a gender based systematic review [6]. In this study, the most selected options that emerged as the reasons for choosing anaesthesiology was that it was the only clinical speciality available during counselling (32.8%, n=82) and super specialisation was not a must for job opportunities (32%, n=80). Genuine interest in the subject and longterm ambition to be an anaesthetist (44.3%, n=39) were the main reasons cited by those who selected anaesthesia as first choice. Of note, UG exposure did not count as a notable influence in the present study, which rather exemplifies the low impact made by the subject presence in the UG curriculum. Kamat CA et al., identified factors relating to interest in subject including aptitude for related specialisations (critical care, pain) as the predominant influences in choosing anaesthesia [13].

The majority (68%, n=175) of the participants in this survey were satisfied or satisfied to an extent (28%, n=72) with their career choice of anaesthesia, although most of them (65%, n=167) had joined anaesthesiology in spite of it not being their first preference. There was no valid association between satisfaction with career choice and preference. Studies on career satisfaction have reported high rates of satisfaction with choosing anaesthesiology [14,15]. Ability to deliver good quality of patient care, intellectually stimulating and challenging nature of the work, diversity of clinical spectrum, good working hours coupled with high earning potential are inherent positive attributes which have been variously quoted as reasons for professional satisfaction [16,17]. The findings suggest that there is an awareness gap among medical graduates regarding the scope of the speciality. Bridging this gap is paramount in improving the recruitment quality.

Training in anaesthesiology poses unique challenges to the clinicianeducators [18]. It is a fine balancing act between ensuring that the trainee gets adequate knowledge base and clinical exposure to deal with the ever-increasing complexity of modern health care while simultaneously structuring training programs to avoid fatigue and burnout as well as minimising the risks to patients inherent in anaesthesiology training. The training needs to be reviewed in the student's perspective to identify any lacunae so that decisive action may be directed to tailor the training to fit their needs. Majority of the trainees in this survey responded that they were satisfied with the training that they receive. More case-based discussions, adding simulation sessions with mannequin training and improvement in theory classes were the key suggestions elicited from the survey participants. Students should be encouraged to develop a culture of research as it was found out that only few of the respondents were involved in research publications. Recent years have seen the emergence of numerous innovative training methods in medical education. These developments should be made use of to integrate competency-based education, problem-based learning, simulation and improvement in communication skills to anaesthesiology training and design an outcome-based curriculum with a culture of frequent feedbacks [18].

More than half of the study participants (60%, n=154) reported being stressed out during the course. Stress and burnout are common among anaesthesia professionals, more so in younger physicians with lower experience [19]. Dealing with life threatening emergencies, frequent on calls and night duties, imbalance between personal and professional lives, inadequate resources, strained

professional relationships, especially with surgical colleagues have all been variously quoted as causes [13]. High work load leaving little time for academics, vast syllabus and frequent heavy night duties were the most frequent reasons for stress in this survey participants. Frequent conflicts have been known to arise with surgical colleagues and this may significantly contribute to stress [14]. But most of the participants (73.5%, n=189) maintained good communication with surgical colleagues. Measures directed to increasing intellectual stimulation, cognitive behavioural techniques and counselling, improving communication skills, providing adequate resources and operating room assistance, organising work schedule to reduce work load and providing more time for academics would go a long way in alleviating stress among trainees [19]. Incorporating Anaesthetists Non-technical Skills (ANTS) in training will be beneficial to reduce stress and improve competence [20].

Enquiry into the future career plans of the trainee anaesthesiologists yielded mixed responses with 46% (n=119) planning to continue as a practicing anaesthesiologist followed by 24% (n=61) expressing their wish to pursue specialisation in critical care. Among the other specialisation options cardiac anaesthesiology evoked more interest (12%, n=31) than others. About 4% (n=10) of the respondents evinced an intention to quit anaesthesiology and pursue another speciality. There is paucity of literature surrounding attrition rates among anaesthesiologists though it has been explored in detail in various other medical specialities. A study on Iranian anaesthesiologists quote a high dropout rate of 39.5% and found job satisfaction and stress as important predictors [21]. It has been suggested that attrition takes place more during earlier postgraduate years and paying attention to this issue is important in work force management [22].

Critical care and life saving aspect of the speciality was what the participants liked best about anaesthesiology. The feel-good factor of being a knight in shining armour in critical situations has always been perceived as the best thing about the speciality [17]. Lack of recognition, behind the curtains job, with domination by surgical colleagues were the most disliked aspects. This needs to be addressed by raising public awareness about the role of anaesthesiologists both inside and outside the operating room.

The overall perception of the speciality remained good among the respondents as 82% (n=212) opined that they would recommend anaesthesiology as career choice for others. Increasing the duration and practical exposure of UG anaesthesiology rotations was recommended to attract potential aspirants. The need to build awareness regarding the attributes of the speciality amongst the medical UG population has been explored in various studies [4,13]. Hopefully, this would be realised in Indian medical graduates by the recently implemented competency based UG curriculum [23]. Inter professional education has emerged as a key theme in anaesthesia training as much of the professional practice involves interaction with other specialities and if implemented can improve health care outcomes [18]. Tyagi A et al., opined that personality assessment and stress handling ability should be incorporated in the selection process along with performance in entrance examinations during career counselling [4].

Main strength of this study was the confidentiality that was maintained throughout and hence frank and unbiased responses could be elicited.

Limitation(s)

One of the limitations of this study is that broader domains of career selection, perceptions about the speciality, stress and job satisfaction and aspects of PG training were included in a single survey and hence, these individual areas could not be explored in

detail. The study population though composed of trainees from all over India, were those who had already made their career choice and hence there may be some ambiguity in interpreting their motivational factors.

CONCLUSION(S)

Raising awareness about the scope of anaesthesiology, highlighting the lifesaving aspect and diverse career options, along with introduction of the subject earlier with adequate clinical exposure in the UG curriculum may kindle interest towards pursuing the speciality and can improve the recruitment profile. A restructuring of PG education in continuum with UG education incorporating the latest advances in education technologies and implementing measures to reduce stress among trainees is the need of the hour.

REFERENCES

- [1] Thorat P, Shidhave R, Goel G, Gupta AK, Divekar DS, et al. Career choice influences in Indian Anaesthetisiologists: A cross-sectional survey. Sri Lankan J Anaesthesiol. 2011;19:43-48.
- [2] Kempthorne P, Morriss WW, Mellin-Olsen J, Gore-Booth J. The WFSA Global Anesthesia Workforce Survey. Anesth Analg. 2017;125:981-90.
- [3] Meara JG, Leather AJ, Hagander L, Alkire BC, Alonso N, Ameh EA, et al. Global Surgery 2030: Evidence and solutions for achieving health, welfare, and economic development. Lancet. 2015;386:569-624.
- [4] Tyagi A, Kumar S, Sethi AK, Dhaliwal U. Factors influencing career choice in anaesthesiology. Indian J Anaesth. 2012;56(4):342-47.
- [5] Subramanian B. Anesthesiologist as a perioperative physician. Journal of Anesthesia and Critical Care Case Reports. 2017;3(3):29.
- [6] Levaillant M, Levaillant L, Lerolle N, Vallet B, Hamel-Broza JF. Factors influencing medical students' choice of specialization: A gender based systematic review. E Clinical Medicine. 2020;28:100589.
- [7] Sreekar H, Nithya R, Nikhitha R, Sreeharsha H. Career intentions of medical students trained in India. Educ Health. 2014;27:64-65.
- [8] Anand R, Sankaran PS. Factors influencing the career preferences of medical students and interns: A cross-sectional, questionnaire-based survey from India. J Educ Eval Health Prof. 2019;16:12.
- [9] Clinite KL, DeZee KJ, Durning SJ, Kogan JR, Blevins T, Chou CL, et al. Lifestyle factors and primary care specialty selection: Comparing 2012-2013 graduating and matriculating medical students' thoughts on specialty lifestyle. Acad Med. 2014;89(11):1483-89.
- [10] Querido SJ, Vergouw D, Wigersma L, Batenburg RS, De Rond ME, Ten Cate OT. Dynamics of career choice among students in undergraduate medical courses. A BEME systematic review: BEME Guide No. 33. Med Teach. 2016;38(1):18-29.
- [11] Turner G, Goldcare MJ, Lambert T, Sear JW. Career choices for anaesthesia: National surveys of graduates of 1974-2002 from UK medical schools. Br J Anaesth. 2005;95:332-38.
- [12] Cannon D. Generation X and the new work ethic. The seven million project working paper 1. Demos, London; 1994.
- [13] Kamat CA, Todakar M, Rangalakshmi S, Pawan. Awareness about scope of anaesthesiology, attitudes towards the speciality and stress levels amongst postgraduate students in anaesthesiology: A cross-sectional study. Indian J Anaesth. 2015;59:110-17.
- [14] Singh S, Singh A, Annamalai A, Goel G. Anaesthesiology as a career vis-à-vis professional satisfaction in developing countries. J Anesthe Clinic Res. 2013;4:304.
- [15] Jenkins K, Wong D. A survey of professional satisfaction among Canadian anesthesiologists. Can J Anaesth. 2001;48(7):637-45.
- [16] Kluger MT, Townend K, Laidlaw T. Job satisfaction, stress and burnout in Australian specialist anaesthetists. Anaesthesia. 2003;58(4):339-45.
- [17] Lande-Marghade P. Choice of anaesthesiology as a career option: A dilemma? Journal of Anaesthesia and Critical Care Case Reports. 2016;2(1):1.
- [18] Bould MD, Naik VN, Hamstra SJ. Review article: New directions in medical education related to anesthesiology and perioperative medicine. Can J Anesth. 2012;59(2):136-50.
- [19] Sanfilippo F, Noto A, Foresta G, Santonocito C, Palumbo GJ, Arcadipane A, et al. Incidence and factors associated with burnout in anesthesiology: A systematic review. BioMed Research International. 2017;2017:8648925.
- [20] Flin R, Patey R. Non-technical skills for anaesthetists: Developing and applying ANTS. Best Pract Res Clin Anaesthesiol. 2011;25(2):215-27.
- [21] Mousavi SM, Asayesh H, Sharififard F, Qorbani M. Job satisfaction and turnover intention among anesthesiologists: An Iranian Study. Anesth Pain Med. 2019;9(3):e83846.
- [22] Emmanouil B, Goldacre M, Lambert T. Aspirations to become an anaesthetist: Longitudinal study of historical trends and trajectories of UK-qualified doctors' early career choices and of factors that have influenced their choices. BMC Anesthesiol. 2017;17:100.
- [23] Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate. 2018;3:145-54.

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AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

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ANNEXURE 1 QUESTIONNAIRE

- Age:
- 2. Sex:
- 3. Occupation of spouse:
- 4. Institution of Undergraduate training-Government/private
- 5. Institution of Postgraduate training-Government/private
- 6. Course: MD/DA/DNB
- 7. Post-graduation year: Ist year/IIInd year/IIIInd year
- 8. Any experience in anaesthesia (other than undergraduate/internship) prior to joining PG course: Yes/No (If yes, duration and type of exposure)
- 9. Was anaesthesia your first choice for postgraduation: Yes/No

If not specify your choices in order of preference

- 10. Reasons for choosing anaesthesiology. (select one or more)
- a) Genuine interest in the speciality/always wanted to be an anaesthesiologist
- b) Inspiration from under graduate exposure/previous work experience in Anaesthesia
- c) Felt that it is less hectic when compared to other specialities
- d) The only speciality (clinical) available in my counselling
- e) Opportunity of overseas placement/financial prospects
- f) Inspired by a role model in anaesthesia
- g) Advise from family members/others
- h) Dislike of OP/ward work
- i) Spouse is in surgical speciality
- j) Sense of control and immediate work results
- k) Fascination with the technical aspect of the speciality and opportunity to do procedures
- I) Aptitude towards super specialisation
- m) Super specialisation is not a must for job opportunities
- n) Expense incurred for joining this speciality is less compared to others
- 12. Are you satisfied with career choice of anaesthesiology?
- a) Yes; b) To some extent; c) No
- 13. Overall satisfaction with your PG training/ teaching. (1 is least happy and 5 is fully satisfied.)
- 1 2 3
- .
- 14. Your training/teaching needs improvement in which areas (select one or more)
- a) Theory classes
- b) Case discussions
- c) Clinical exposure

- d) Chance for doing procedures
- e) Availability of gadgets/ equipments

PLAGIARISM CHECKING METHODS: [Jain H et al.]

• Plagiarism X-checker: Nov 30, 2020

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• Manual Googling: Dec 31, 2020

- f) Add Simulation lab and mannequin training
- g) Any other specify.....
- 15. Do you feel there is stress during your PG course?
- a) Yes;
- b) No;
- c) To some extent
- 16. Reasons for the stress
- a) Harassment from seniors and staff
- b) Training is not adequate to cope with the demands of the speciality
- c) Frequent and heavy night duties
- d) Vast syllabus
- e) Feels your skills are inadequate
- f) Lack of time to study because of working hours/ case load
- g) Lack of time for family
- h) Pressure/harassment from surgery colleagues
- i) Any other specify.....
- 17. Were you able to adjust to the demands of the speciality?:
- a) Yes; b) No
- Have you done Papers/ Poster presentations during your course?: a) Yes; b) No
- 19. Have you been part of any publications in journals?: a) Yes; b) No
- 20. Your future career plans
- a) Continue as a practising anaesthesiologist
- b) Super specialisation in
- (i) Cardiac anaesthesia
- (ii) Neuro Anaesthesia
- (iii) Paediatric Anaesthesia
- (iv) Critical Care
- (v) Pain
- c) Take up another speciality
- 21. Will you recommend anaesthesiology as a career choice for others?: Yes/No
- 22. Do you have any suggestions to attract more doctors to take up anaesthesiology?
- a) Make anaesthesiology a separate subject of undergraduate course
- b) Increase the duration and practical exposure during undergraduate training
- c) Others (specify)
- 23. How well can you communicate with your surgical colleagues?: a) Poor b) Good
- 24. What do you like most about Anaesthesiology?
- 25. What do you dislike most about Anaesthesiology?