

Survey of Factors that Influence Doctors' Selection of Anaesthesiology as Professional Specialty and Opinion Regarding Being Anaesthesiologists

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Abstract

Objectives: The aims of the present study were to survey reasons regarding choosing Anaesthesiology as professional specialty and evaluate perception regarding being anaesthesiologists.

Methods: This cross sectional, multi-institutional study anonymously surveyed first year Anaesthesiology residents in resident training centres in Bangkok who came for the first inter-hospital lectures at Department of Anaesthesiology, Faculty of Medicine, Chulalongkorn University in July, 2012. A structured questionnaire comprising of demographic data, reasons for choosing anaesthesiology, and attitude regarding anaesthesiologists was filled in and returned before beginning of lectures.

Results: All 50 anaesthesia residents who attended the inter-hospital lectures responded; 40 residents (80%) were female. By selecting three preferred choices, the respondents stated reasons for choosing Anaesthesiology were as follows: 1) Responsibility of patient on case by case basis 38 (76%); 2) Impression of anaesthesiologist as a role model 17 (34%); 3) Career characteristic of both knowledge and skill 16 (32%); 4) Limited number of patients under responsibility 15 (30%); 5) Not too frequent communication 14 (28%). In the respondents' view point, disadvantages of being anaesthesiologist were high chance of being legally sued (74%) and contact with blood and/or body fluids (60%). Characteristics of good anaesthesiologists were identified as the ability to make decisions during critical events (86%), high responsibility (62%), ability to obtain patients' data for adjusting of anaesthesia care (46%) and knowledge of own limitations and capacity (46%).

Conclusion: Career characteristics favouring controllable lifestyle such as responsibility of patients on case by case basis, identification of the anaesthesiologist as a role model and professional ability of both knowledge and skills were features that residents found most attractive.

Keywords: medical education, residency training, career choice, anaesthesia, selection.

Introduction

Recent figures indicate that there are over 1700 doctors graduating from 19 medical schools in Thailand each year (Thai Medical Council, 2013).

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With increasing demand for anaesthesiologists working in the fields of anaesthesia, critical care and pain management services, the Royal College of Anaesthesiologists of Thailand and the specialty training committee of the Medical Council of Thailand have also increased the number of trainees in anaesthesia. Reasons considered by residents when selecting a medical specialty have been reported in the literature (Sandchez *et al.*, 2011). As a training centre for postgraduates in anaesthesia, research regarding anaesthesia residents is needed for possible improvement of the training program. The aims of the present study were to evaluate the characteristics of anaesthesia residents, identify reasons for choosing Anaesthesiology

as professional specialty and obtain their perceptions on the disadvantages of being anaesthesiologists and characteristics of good anaesthesiologists. The findings may be helpful in recruitment and retention of residents in the training program.

Methods

This study was conducted in the Department of Anaesthesiology, Faculty of Medicine, Chulalongkorn University, Thailand. A structured questionnaire was developed by three senior anaesthesiologists, based on the following aspects: job characteristics, job environment, interpersonal relationship, moral reasoning and benefits perception regarding being anaesthesia residents. Discrepancies in any questions were solved by discussion. The structured questionnaire comprised of the following topics: I) Demographic and education characteristics, II) Reason for choosing anaesthesiology as professional specialty, III) Perceived disadvantages of being anaesthesiologists, IV) Characteristics of good anaesthesiologists. Content validity was determined as follows: +1=agree, 0=uncertain, -1=disagree and internal consistency was calculated with formula of $IC = \frac{\sum R}{3}$ whereas $\sum R$ =summation of score rated by three anaesthesiologists. The IC of ≥ 0.5 was considered acceptable. Items with $IC < 0.5$ were adjusted until the $IC \geq 0.5$ was achieved. The Cronbach's alpha coefficient was >0.8 for

agree/disagree items questionnaire. For II, III, and IV the respondents were requested to choose three most preferred items. The questionnaire was distributed to all first year anaesthesia residents who attended the first day of inter-hospital lectures, and was requested to be filled on anonymous and voluntary basis and returned to the distributor before beginning of the first lecture in the morning of July 3, 2012. The data was expressed in numbers (percentage), mean (standard deviation) and mean score.

Results

Fifty first year anaesthesia residents (academic year 2012) attended the first inter-hospital lecture course organized by the Bangkok inter-hospital anaesthesia residency group. These lectures were provided by instructors of the Department of Anaesthesiology, Faculty of Medicine, Chulalongkorn University. All 50 residents (100%) filled in the questionnaire and returned to the distributor before the beginning of first lecture. The majority (n=40, 80%) were female. The institute awarding their first degree varied, with 12 (24%), eight (16%), seven (14%) residents graduating with the M.D. degree from Naresuen University, Chulalongkorn University and Siriraj Hospital Mahidol University respectively. Details are given in Table 1.

Table 1: Institution of M.D. graduation of respondents

Faculty of Medicine	Founded (A.D.)	Government	Location Bangkok	Anesthesia Resident Training	Frequency (%)
Naresuen University	1994	Yes	No	No	12 (24)
Chulalongkorn University	1948	Yes	Yes	Yes	8 (16)
Siriraj Hospital, Mahidol University	1890	Yes	Yes	Yes	7 (14)
Khon-Kaen University	1972	Yes	No	Yes	5 (10)
Prince of Songkla University	1972	Yes	No	Yes	4 (8)
Boromranchanok Institute,	1996	Yes	No	No	4 (8)
Ramathibodi Hospital, Mahidol University	1965	Yes	Yes	Yes	3 (6)
Vajira Hospital, Bangkok Metropolis	1993	Yes	Yes	No	2 (4)
Srinakharinwirot University	1985	Yes	No	No	2 (4)
Thamasat University	1990	Yes	No	No	2 (1)

The geographic distribution of respondents was as follows: 18 (36%) from Bangkok; 13 (26%) from northern region, six (12%) from north-eastern region, six (12%) from middle region, four (8%) from southern region of Thailand. Three respondents (6%) did not indicate their geographic data. The most common reasons of choosing Anaesthesiology

for specialty training were anaesthesiologists' responsibility of patients on case by case basis (76%), impression of a good anaesthesiologist as a role model (34%), anaesthesiologist profession with capability of both knowledge and skills (32%). Details of reasons for choosing anaesthesiology as a career are demonstrated in Table 2.

Table 2: Questionnaire regarding reasons of choosing Anaesthesiology for specialty training

Reason for choosing Anaesthesiology Specialty	frequency	%
1. Responsibility of patient on case by case basis	38	76
2. Impression of a good anaesthesiologist as a role model	17	34
3. Profession with capability of both knowledge and skill	16	32
4. Limited number of patients under responsibility	15	30
5. Not too frequent communication	14	28
6. High chance of helping patient	13	26
7. Working in air-conditioned room	8	16
8. Chance of early training before 3 years after graduation	7	14
9. Anaesthesia is fine and delicate work	5	10
10. Following close friend or lover studying in Bangkok	5	10

The common perceptions of disadvantages of being anaesthesiologist were high chance of being the target of a law suit (74%), high chance of contact with blood and/or body fluids (60%) and possibility for error or critical incident during anaesthesia practice (56%). Most common characteristics of good

anaesthesiologists identified by the residents were the ability for decision making during critical event (86%) and high responsibility (62%). Perceived disadvantages of being anaesthesiologist and characteristics of good anaesthesiologists among respondents are shown in Table 3 and 4 respectively.

Table 3: Perceived disadvantages of being an anaesthesiologist

Questionnaire	frequency	%
1. High chance of being law suits	37	74
2. High chance of contact with blood and/or body fluids	30	60
3. Prone for error or critical incident	28	56
4. Low recognition of work	23	46
5. Feel like a second class doctor	10	20
6. There is no ownership of patient under responsibility	7	14
7. Critical and stressful job	2	4

Table 4: Identified characteristics of good anaesthesiologists

Questionnaire	frequency	%
1. Ability to make a decision during a critical event	43	86
2. High responsibility	31	62
3. Ability to obtain patient's data for adjusting of anaesthesia care	23	46
4. Know own limit and capacity	23	46
5. Contain morality	17	34
6. Learn from others' error	6	12
7. Absence of physical and psychological abnormalities	2	4
8. Absence of alcohol abuse / drug addict	1	2
9. Good emotional control	1	2
10. Good planner / manager	1	2

Discussion

Anaesthesiology residency programs share the common objective of producing competent anaesthesiologists and future academicians. Attracting physicians into the academic anaesthesiology training program is important for the continued advancement of the specialty. There are several reports of factors influencing medical students' selection of Emergency Medicine, Family Medicine, Surgery, Thoracic Surgery and Orthopaedics. in many countries (Love *et al.*, 2012; Biggs *et al.*, 2011; Rogers *et al.*, 2012; Sarkaria *et al.*, 2010; Johnson, 2012). Studies regarding anaesthesiology training are scarce (Sanchez *et al.*, 2011; Steiner *et al.*, 2012).

While academic training programs seek trainees with the greatest potential for professional contribution, study of factors or reasons influencing the choice of anaesthesiology career in the context of Thailand would be beneficial in application, counselling, mentoring of residents and improvement of anaesthesiology residency training program.

The present study surveyed all 50 new first year anaesthesia residents from anaesthesia training institution in Bangkok who attended the first inter-hospital lecture course with overall response rate of 100%. The majority (80%) were female. This is in accordance with anaesthesiology being historically a female dominated specialty in Thailand. The possible explanations for female majority in the anaesthesiology residency training program

are, location of practice in large hospitals or in big cities, earlier recruitment as anaesthesia residents compared to other specialties and more female leadership in anaesthesiology departments. This is in contrast to studies regarding gender differences in specialties showing male predominance (Charuluxananan *et al.*, 2010; Kuehn 2012; Johnson *et al.*, 2012; Yang *et al.*, 2012).

Among respondents of the present study, two thirds were graduates from Naresuen University, Chulalongkorn University, Siriraj Hospital Mahidol University and Khon-Kaen University. It is likely that medical student's experiences may have an influence on choice of career in specialty. The present study has shown increasing numbers of anaesthesia residents graduated from newly established universities.

When requested to select the three strongest reasons for choosing anaesthesiology as career specialty, case by case responsibility, experience of a good anaesthesiologist as a role model and career characteristics of competency of both knowledge and practical skills were strongly identified. Currently there is an increasing tendency towards specialties favouring a more controllable lifestyle. One-third of respondents in the present study also cited impression of good anaesthesiologist as role model. Other studies have also revealed that presence of a role model is also associated with interest in specialties (Evans & Saran 2002; Brundage *et al.*, 2005; Erzurum *et al.*, 2000). Exposure to positive role models is an important factor influencing career

decisions. Competency, clinical skills, personality and teaching skills have been identified as important factors of positive role models by medical students (Wright *et al.*, 1997). Career characteristics of anaesthesiologists such as capability of both knowledge and clinical skills, taking care of a limited number of patients and less frequent doctor-patient communication and working in convenient environment are also mentioned by respondents in the present study. These findings are similar to previous study that reported the influence of challenges during clinical practice and lifestyle issues on choice of specialty (Abiove *et al.*, 2012). A few respondents identified the ability to be recruited as anaesthesia residents before completion of 3 year clerkship as internist. This contrasts with other specialties such as obstetrics and general surgery which have changed their requirements for recruitment resulting in a shortage of manpower in those specialties. It is interesting that some anaesthesia residents quoted following their close friends or lovers who came for continuing study in Bangkok. Work-life issue is also cited as factor influence choice of choosing career specialty (Kuehn, 2012). In specialties with a high number of women, pregnancy during training has been acceptable (Kuehn, 2012).

In the present study, the principal disadvantage identified was the high chance of being targeting in a law suit. In Thailand, anaesthesiology is the eighth among the specialties most frequently being legally sued (Thai Medical Council, 2007) which is considered not high. High chance of direct contact with blood and body fluids was stated as the second disadvantage, particularly during intubation, extubation and invasive procedures. They also stated the disadvantage of a possible critical incident or error during this stressful job. This is similar to findings the surgery specialty, where the surgical work environment was one of reasons that junior doctors were deterred from choosing a surgical career (Rogers *et al.*, 2012). Other reported disadvantages of being an anaesthesiologist were absence of ownership of the patient under responsibility, feeling like a second class doctor and low recognition for work from the patients and their families. These can be explained by a sense of inferiority which is in contrast to findings of a previous study which identified that learning and carrying out techniques of required of an anaesthesiologist was the most important reason to choosing anaesthesiology as a

specialty. (Sanchez *et al.*, 2012). All the respondents had one month training experience prior to answering the questionnaires, which was considered sufficient experience to state characteristics of good anaesthesiologists. Ability to make decisions during a critical event, high responsibility, ability to obtain patient's data for adjusting of anaesthesia care and knowing own limits and capacity were commonly cited as characteristics of a good anaesthesiologist. High morality was also identified as important characteristics by one-third of the respondents. These are in accordance to criteria established by which physicians may be certified as diplomats of the American Board of Anaesthesiology. Essential clinical competence evaluation by the American Society of Anaesthesiologists includes high standards of ethical and moral behaviour, responsibility, appropriate reaction to stressful situations, learning from experience and knowing limits etc. (American Board of Anaesthesiologists, 2013).

There are several limitations to this study. First, this was a descriptive cross-sectional study that did not compare with a group of graduates from a different specialty. Second, the respondents were anaesthesia residents in a training program confined to Bangkok. However, these included the majority of residents in one academic year in Thailand, since there are few anaesthesiology residents in regional institutes.

Conclusion

This study showed that anaesthesiology trainees in Thailand have a female predominance. There were more graduates from newly established Faculties of Medicine choosing anaesthesiology as a professional specialty. Career characteristics favouring controllable lifestyle such as responsibility of patients on a case by case basis, identification of good anaesthesiologists as role models and professional ability of both knowledge and skills were features that residents found most attractive. Perceived disadvantages of being anaesthesiologists were chances of law suits and possible contact with blood and/or body fluids. Identified characteristics of good anaesthesiologists were decision making ability during critical events, high responsibility, ability to obtain patients' data for adjusting of anaesthesia care and knowing own limits and capacity.

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