

Choice of dental specialties among intending residents in a tertiary health institution in Nigeria

***Uyiosa Julia EREGIE (BDS, FWACS), **Joan Emien ENABULELE (BDS, FMCDs, MHPM)**

[Department of Restorative Dentistry, *University of Benin Teaching Hospital and **University of Benin, Benin City, Edo State]

Correspondence

Dr. UJ Eregie

Department of Restorative Dentistry,
University of Benin Teaching Hospital,
Benin City, Edo State,

Email: uyiosaeregie@yahoo.com

ABSTRACT

Objective: Various specialties exist in the field of dentistry and are geared towards meeting the specific dental health needs of society. This study was aimed at identifying factors influencing choice of dental specialties among intending residents.

Methods: This was a questionnaire based cross-sectional study of all intending dental residents seeking postgraduate training in various specialties at the University of Benin Teaching hospital in September 2015. The questionnaire comprised of socio-demographics, specialty applied for and reasons for choice of specialty. The data collected was analyzed using IBM SPSS version 21.0.

Results: A total of 82 respondents were recruited for the study with age range of 25- 44 years and a mean age of 32.43 ± 4.04 . There was a male: female ratio of 1:0.6. Oral and maxillofacial surgery had the highest number of applicants (30.5%) with the least number in Oral Medicine (2.4%). Age, gender and marital status had no significant association with choice of specialty. However, majority of males (88.0%) chose Oral and maxillofacial surgery compared to females (12.0%), while all the females (100%) chose to specialize in Periodontics. The most frequent reason for choice of specialty was "Personal desire". All the respondents who applied for Prosthetics and Periodontics felt they possessed the skills suited for the specialty while a significant number of respondents in Conservative Dentistry (85.7%), Paedodontics (80.0%) and Oral and Maxillofacial Surgery (72.0%) were influenced by the presence of mentors and role models in the specialty, hence their choice and this was statistically significant ($p=0.049$). All the respondents who applied for Oral Pathology stated that their specialty choice afforded them with research opportunities and this was followed by 85.7% of those who applied for Community Dentistry. On the other hand, no respondent from Paedodontics felt their specialty choice afforded them with research opportunities. All the respondents across all specialties except two respondents from Community Dentistry stated that family pressure had no influence in their choice of specialty and this was also statistically significant. ($p=0.009$)

Conclusion: There is inequality in quest for specialization in the different dental specialties in Nigeria. There is need for more role models and mentors across all specialties and modalities to increase the personal desire of prospective applicants.

Keywords: Postgraduate training, Dental specialization, Intending dental residents

Citation: Eregie UJ, Enabulele JE. Choice of dental specialties among intending residents in a tertiary health institution in Nigeria. *Nig J Dent Res* 2019; 4(1):5-12.

INTRODUCTION

The dental profession is in a constant state of self-assessment aimed at advancing its discipline in a consistent and measurable fashion with the goal of improving patients' oral health, increasing efficiency in the health care system, and ultimately enhancing society as a whole.¹ Specialization in any field is known to be associated with higher productivity.² The same applies to the healthcare sector in general and specifically to dentistry where general practice is being rivaled with the increasing demand for specialization.² Dental specializations play a key role in improving dental education and practice, stimulating research and defining quality expectations in the various areas of expertise.³

Various specialties exist in the field of dentistry with the aim of improving oral health care and several studies have shown that there are diverse factors which contribute in choosing a specific field of dental specialization.^{2,4-7} These factors may be due to advice from friends or family^{8,9}, admiration of a certain mentor in that field or genuine interest in the specialty.^{8,9,10} Although, motivations do vary according to specialties, additional factors may include lifestyle choices, a possibility of private practice, an interest in specific diseases, a varied scope of practice, an interest in research and teaching, financial gains,¹¹ perceived remuneration, how interesting the course was at undergraduate level or level of exposure to the specialty at undergraduate level.¹⁰ A study carried out at the same locality noted gender bias as a factor and ability to be with family influencing choice of specialty.¹² Globally, studies have been carried out at both undergraduate and postgraduate levels to assess reasons for preference in specific areas of dental specialization.^{2,4-7,13,14} Socioeconomic improvement and factors such as flexible working hours, financial benefit, good job opportunities abroad, self-employment and having a dentist family member have been identified as significant predictors of career and specialty preferences.^{13, 15,16} In addition, personal interest in a specialty and challenging complexity of cases or intellectual content are also among the predictors of specialty choice.¹⁷ In Nigeria, concerns have been raised about the lopsided distribution of dental specialists and its potentially harmful impact on dental education in Nigeria.^{4,5,14} Previous studies attributed this lopsidedness to biased levels of interest by dental graduates towards certain dental specialties possibly

due to the non-availability of specialists in the less favoured specialties.^{4,10} There is therefore a need to understudy the various factors influencing choice of dental specialties among intending dental residents with the view to identify reasons for the asymmetrical distribution as well as seek ways in providing solutions to the lopsided distribution of dental specialists thereby improving all-round dental care. Based on the foregoing, this study was designed to identify factors influencing choice of dental specialties among intending residents at a tertiary hospital in Nigeria.

MATERIALS AND METHODS

This was a questionnaire based cross-sectional study of all intending dental residents, seeking postgraduate training positions, into the various dental specialties at the University of Benin Teaching hospital in September 2015. A total of 82 intending dental residents consented to participate in the study. The questionnaire comprised of socio-demographic characteristics, specialty applied for and reasons for choice of specialty. A total of 23 questions designed by the researchers based on extensive research from literature was used in determining the reasons for choice of specialty. Names and other personal identifiable information were omitted from the questionnaire to ensure confidentiality.

The data collected was analyzed using IBM SPSS version 21.0. Analysis was done using frequency distribution, cross tabulations and test of significance with Chi square. $P < 0.05$ was considered statistically significant.

RESULTS

A total of 82 respondents participated in the study with age range of 25- 44 years and a mean age of 32.43 ± 4.04 . Table 1 shows the socio-demographic characteristics of the respondents. There was a male preponderance with male: female ratio of 1:0.6. with a mean post-graduation year value of 5.63 ± 2.48 . Figure 1 depicts the specialties applied for by the respondents with Oral and maxillofacial surgery having the highest number of applicants (30.5%) and the least number applying for Oral medicine (2.4%). Age, gender and marital status had no significant association with choice of specialty. However, it was observed that majority of the respondents (88.0%) who applied to Oral and maxillofacial surgery were males compared to females (12.0%). Of note also is

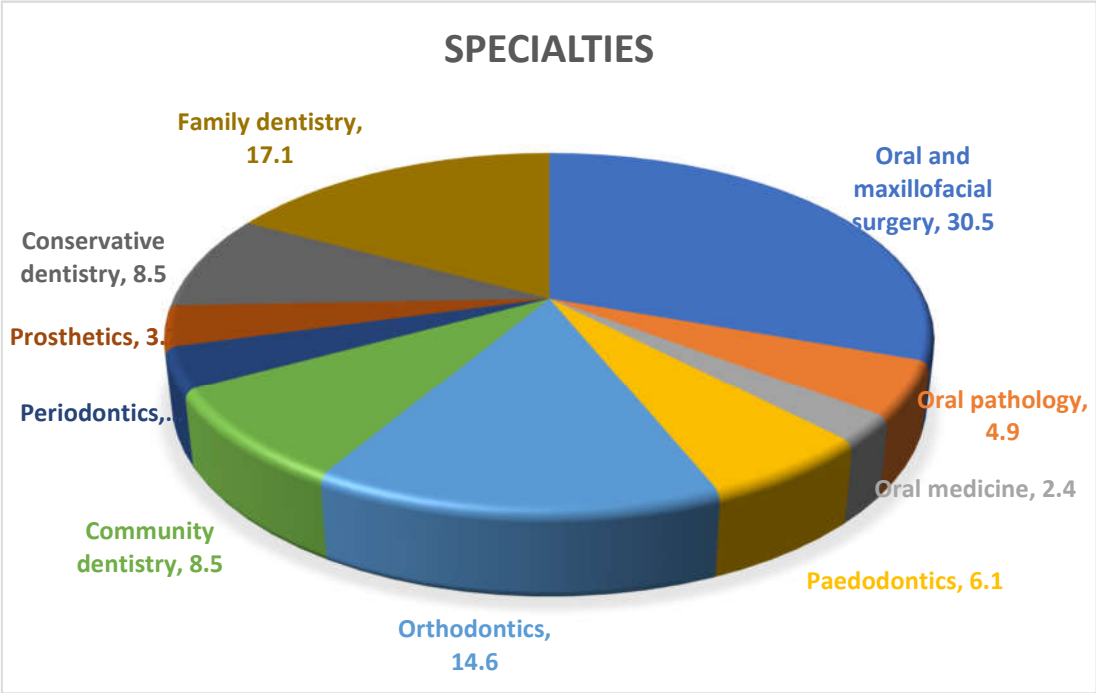


Figure 1: Specialty choice among the respondents.

that despite the male preponderance of this sample population more females chose Periodontics, Community and Family Dentistry. (Table 2) Table 3 shows the reasons for choice of specialty by the respondents. The most frequent reason for choice of specialty was “personal desire” accounting

for 69.5%, followed by presence of role models and mentors in the specialty (57.3%) and presence of prospects for career advancement (54.9%). The least common reason for choice of specialty was family pressure (2.4%) and peer pressure (1.2%).

Table 1. Sociodemographic Characteristics of the respondents

Characteristics	Frequency(n)	Percent (%)
Age group(years)		
25-29	22	26.8
30-34	36	43.9
35-39	17	20.7
40-44	7	8.5
Gender		
Male	51	62.2
Female	31	37.8
Marital Status		
Single	43	52.4
Married	39	47.6
Years post-graduation		
<5years	28	34.1
5-10years	49	59.8
>10years	5	6.1
TOTAL	82	100.0

Table 2: Specialty choice in relation to gender of the respondents

Specialty	Male (n%)	Female (n%)	Total (n%)	P-value
Oral and maxillofacial surgery	22(88.0)	3(12.0)	25(100.0)	0.06
Oral pathology	2(50.0)	2(50.0)	4(100.0)	
Oral medicine	1(50.0)	1(50.0)	2(100.0)	
Paediatric dentistry	3(60.0)	2(40.0)	5(100.0)	
Orthodontics	8(66.7)	4(33.3)	12(100.0)	
Community dentistry	3(42.9)	4(57.1)	7(100.0)	
Periodontics	0(0.0)	3(100.0)	3(100.0)	
Prosthetics	2(66.7)	1(33.3)	3(100.0)	
Conservative Dentistry	4(57.1)	3(42.9)	7(100.0)	
Family Dentistry	6(42.9)	8(57.1)	14(100.0)	
TOTAL	51(62.2)	31(37.8)	82(100.0)	

Table 3. Reasons for choice of dental specialty by the respondents*

Reasons	Frequency (n)	Percent (%)
Presence of role models and mentors in the specialty	47	57.3
Diversity of activities and procedures	44	53.7
Undergraduate exposure to the specialty	37	45.1
Adequate undergraduate preparedness in the specialty	25	30.5
Intellectual content of the specialty	42	51.2
Complex and challenging procedures in the specialty	41	50.0
Private practice opportunity	38	46.3
Possibility of passing post-graduate exams on time	13	15.9
Possession of skills/talent suited for the specialty	43	52.5
Availability of residency space	13	15.9
Peer pressure	1	1.2
Financial income (more lucrative)	12	14.6
Diversity of patients	27	32.9
Less clinical work	4	4.9
Lifestyle friendly	23	28.0
Flexible work hours	13	15.9
Less stressful working style	8	9.8
An Area of special need	26	31.7
Job opportunity	20	24.4
Personal desire	57	69.5
Research opportunities abound	29	35.4
Family pressure	2	2.4
High prospects for Career advancement	45	54.9

*Multiple Responses

Table 4: Specialty Choice in relation to possession of skills /talent suited for the specialty

Specialty	Possession of Skills /talent suited for the specialty			P-value
	Yes n (%)	No n (%)	Total n (%)	
Oral and maxillofacial surgery	16(64.0)	9(36.0)	25(100.0)	0.017
Oral pathology	2(50.0)	2(50.0)	4(100.0)	
Oral medicine	0(0.0)	2(100.0)	2(100.0)	
Paediatric dentistry	2(40.0)	3(60.0)	5(100.0)	
Orthodontics	3(25.0)	9(75.0)	12(100.0)	
Community dentistry	1(14.3)	6(85.7)	7(100.0)	
Periodontics	3(100.0)	0(0.0)	3(100.0)	
Prosthetics	3(100.0)	0(0.0)	3(100.0)	
Conservative Dentistry	6(85.7)	1(14.3)	7(100.0)	
Family Dentistry	7(50.0)	7(50.0)	14(100.0)	
TOTAL	43(52.4)	39(47.6)	82(100.0)	

Table 5: Specialty Choice in relation to presence of role models and mentors in the specialty.

Specialty	Presence of role models and mentors in the specialty			P-value
	Yes n (%)	No n (%)	Total n (%)	
Oral and maxillofacial surgery	18(72.0)	7(28.0)	25(100.0)	0.049
Oral pathology	2(50.0)	2(50.0)	4(100.0)	
Oral medicine	1(50.0)	1(50.0)	2(100.0)	
Paediatric dentistry	4(80.0)	1(20.0)	5(100.0)	
Orthodontics	8(66.7)	4(33.3)	12(100.0)	
Community dentistry	1(14.3)	6(85.7)	7(100.0)	
Periodontics	2(66.7)	1(33.3)	3(100.0)	
Prosthetics	1(33.3)	2(66.7)	3(100.0)	
Conservative Dentistry	6(85.7)	1(14.3)	7(100.0)	
Family Dentistry	4(28.6)	10(71.4)	14(100.0)	
TOTAL	47(52.3)	35(42.7)	82(100.0)	

Table 6: Specialty choice in relation to research opportunities

Specialty	Research opportunity		Total n (%)	P-value
	Yes n (%)	No n (%)		
Oral and maxillofacial surgery	7(28.0)	18(17.2)	25(100.0)	0.008
Oral pathology	4(100.0)	0(0.0)	4(100.0)	
Oral medicine	1(50.0)	1(50.0)	2(100.0)	
Paediatric dentistry	0(0.0)	5(100.0)	5(100.0)	
Orthodontics	4(33.3)	8(66.7)	12(100.0)	
Community dentistry	6(85.7)	1(14.3)	7(100.0)	
Periodontics	2(66.7)	1(33.3)	3(100.0)	
Prosthetics	1(33.3)	2(66.7)	3(100.0)	
Conservative Dentistry	1(14.3)	6(85.7)	7(100.0)	
Family Dentistry	3(21.4)	11(78.6)	14(100.0)	
TOTAL	29(35.4)	53(64.6)	82(100.0)	

All the respondents who applied for Prosthetics and Periodontics felt they possessed the skills suited for the specialty (Table 4) while a significant proportion of respondents seeking training positions in Conservative Dentistry (85.7%), Paedodontics (80.0%) and Oral and Maxillofacial Surgery (72.0%) were influenced by the presence of mentors and role models in the specialty (Table 5), hence their choice and this was statistically significant ($p=0.049$).

There was also a statistically significant association noted among the specialty choice and availability of research opportunities. All the respondents who applied for Oral Pathology stated that their specialty choice afforded them with research opportunities and this was followed by 85.7% of those who applied for Community Dentistry. On the other hand, no respondent from Paedodontics felt their specialty choice afforded them with research opportunities (Table 6).

DISCUSSION

This study reports the various factors influencing choice of dental specialties among intending residents in a tertiary hospital in Nigeria. An assessment of these various factors may be able to explain the underlying reasons behind the lopsided distribution of dental specialists in certain fields in dentistry with the aim of curbing the trend and improving oral health care in its entirety. The age range and mean age observed in this study is similar to that of a previous study conducted in Nigeria.⁴ This may be a reflection of the age at which most qualified dentists in Nigeria consider specialization as a career path following graduation from dental school. The higher male: female ratio has been observed in some previous studies^{4,7} but differs from other similar studies which showed a higher female prevalence.^{5,14} This gender differences alludes to the fact that dentistry, in Nigeria is still very much a male dominated profession although some other climes might reveal a different trend. It was also observed that majority of the applicants sought to specialize in Oral and maxillofacial surgery and the least number in oral medicine. The reason for this could be due to the fact that Oral and maxillofacial surgery is one of the oldest and most established dental specialties in existence,¹⁸ with several practicing specialists in Nigeria. Furthermore, it is probably well known to other health professionals, a trend which has also been reported in previous studies.^{4,5} On the other hand, oral medicine had the least indicated interest

among the participants with other specialties such as prosthetics and periodontics following closely. This could be explained by the few numbers of specialists currently practicing in these fields in our environment. Furthermore, it is possible that undergraduate exposure to these specialties was not enough to endear specializations in these fields.¹⁰ In previous studies, none of the respondents chose oral medicine as an area of specialization.^{4,19}

Most of the males sought training in Oral and maxillofacial surgery compared to females. This finding is also similar to previous studies.^{4,5,13,20} This could be attributed to the very demanding and challenging nature of the specialty which most females may feel they cannot cope with, as females would prefer specialties where they would have more time to focus on family as well as pursue their career. In addition, females possess a nurturing skill in contrast to the problem-solving skill observed among males. This has also been corroborated by several other studies^{21,22-26}

'Personal desire for the specialty' was reported as the most frequent reason for specialty choice. This could be explained by the fact that persons are more intrinsically motivated towards their choice of specialty compared to other external factors. This is also similar to a study conducted on medical interns.²⁷ Possession of Skills /talent suited for the specialty is also significant in influencing choice as was observed in this study especially in the field of Prosthetics and Periodontics where all the participants felt they possessed such skills. In a pilot study conducted at Harvard School of Dental Medicine, it was discovered that "possessing special skills/talents unique to a specialty," "intellectual content of the specialty," and "challenging diagnostic problems" were the factors that most influenced students' decisions to select a particular dental field.²⁸ Presence of mentors and role models in a specialty is also a key factor in influencing choice as seen in participants who enrolled to specialize in Conservative Dentistry, Paedodontics and Oral and Maxillofacial surgery. A similar study reported that participants choose a career in Paediatrics because of the presence of mentors in the specialty.²¹ In addition, several other studies have also corroborated the role of having mentors and role models in influencing specialty choice.^{21,28,29}

It was also reported by all the participants in Oral Pathology and majority in Community Dentistry that their specialty choice afforded them with research

opportunities. Although the exact reason for this has not been determined, it may be related to the fact that the specialty Oral Pathology is concerned with diagnosis and study of the causes and effects of diseases affecting the oral and maxillofacial region, and that can serve as a stimulant to research work among intending residents. Community Dentistry is a field-based specialty which exposes the resident to a large sample of the population with accompanying areas of research interest. However further research is still needed to corroborate these findings. Family pressure proved to have little or no influence on choice of specialty as almost all the participants were opposed to its role. This further corroborates the fact that an intrinsic desire towards a specialty in addition to other contributory factors are very key in influencing specialty choice among intending residents.

CONCLUSION

There is inequality in quest for specialization in the different dental specialties in Nigeria. There is need for more role models and mentors across all specialties and modalities to increase the personal desire of prospective applicants.

REFERENCES

1. Lamster IB, Eaves K. A Model for Dental Practice in the 21st Century. *Am J Public Health*. 2011; 101(10): 1825-1830.
2. Alshahrani S, Masud N, Alswayyed T, Masoud H, Almothen M, Moukaddem A, et al. Emerging Trends in Dental Specialty and Employment Choice Among Male Dentists Graduating from King Saud University between 2005 and 2015. *Egyptian J Hosp Med*. 2018; 70(6): 948-954.
3. Christensen GJ. What is the role of specialties in dentistry? *J Am Dent Assoc*. 2003; 134(11):1517-1519.
4. Arowojolu OM, Aderinokun GA, Arotiba JY, Dosumu OO. Choice of specialty training among Nigerian graduates. *Odonto-Stomatol Trop* 1997; 77:21-24.
5. Nwhator SO, Olatosi O, Ashiwaju MO, Isiekwe GI. Emerging trends in dental specialty choice in Nigeria. *Int Dent J* 2013; 63(2): 91-96.
6. Dhima M, Petropoulos VC, Han RK, Kinnunen T, Wright RF. Dental Students' Perceptions of Dental Specialties and Factors Influencing Specialty and Career Choices. *J Dent Educ*. 201; 76(5): 562-573.
7. Kabila NS, Allamb GG, Abd El-Geleel OM. Motivational reasons for choosing dentistry as a professional career & factors affecting specialty choice among final year dental students. *Future Dent J*. 2018; 4(2): 308-313.
8. Saigal P, Takemura Y, Nishiue T, Fettes MD. Factors considered by medical students when formulating their specialty preferences in Japan: findings from a qualitative study. *BMC Med Educ* 2007; 7:31.
9. Lefe`vre JH, Karila L, Kerneis S, Rouprêt M. Motivation of French medical students to pursue surgical careers: results of national survey of 1742 students. *J Visc Surg* 2010;147(3): e181-e186.
10. Enabulele JE, Anago OJ, Omo JO. Perception of clinical dental students and interns towards prosthodontics and factors influencing its' choice as a future career. *Nig Dent J*. 2015; 23:155-160.
11. Al-Fouzan R, Al-Alihan S, Marwan Y, Al-Saleh M. Factors affecting future specialty choice among medical students in Kuwait. *Med Educ Online* 2012; 17:19587.
12. Chukwumah NM, Umweni AA. Gender disparity in postgraduate dentistry: a 10 year follow up study. *Nig J Dent Res*. 2017; 2(2): 87-92.
13. Halawany HS. Career motivations, perceptions of the future of dentistry and preferred dental specialties among Saudi dental students. *Open Dent J*. 2014; 8:129-135.
14. Kanmodi KK, Badru AI, Akinloye AG, Wegscheider WA. Specialty choice among dental students in Ibadan, Nigeria. *Afr J Health Professions Educ*. 2017; 9(1): 21-23
15. Stein Z, Schoenwetter D, Schroth R, Wiltshire W. Understanding the post-graduate motivations of our dental students. *J Can Dent Assoc*. 2011; 77: 5-13.
16. Halawani HS, Binassfour AS, AlHassan WK, Alhejaily RA, Al Maflehi N, Jacob V et al. Dental specialty, career preferences and their influencing factors among final year dental students in Saudi Arabia. *Saudi Dent J*. 2017; 29: 15-23
17. Saeed S, Jimenez M, Howell H, Karimbux N, Sukotjo C. Which factors influence students' selection of advanced graduate programs? One Institution's experience. *J. Dent Educ*. 2008; 72(6): 688-697.

18. Thoma KH. The history of oral surgery: The oldest specialty of dentistry. *Oral Surg Oral Med Oral Pathol.* 1957; 10(1): 1-10
19. Puryer J, Kostova V, Kouznetsova A. Final-Year Dental Undergraduate Attitudes towards Specialisation. *Dent J.* 2016; 4(26): 1-10
20. Alnomay NS, Aldebassi B, Alghomlas AD, Alawad FI, Almutari WM. Choice of Dental Specialties among dental students and associated influencing and motivating factors in Saudi Arabia. *J Health Inform Dev Ctries.* 2018; 12(2): 1-20
21. Mwachaka PM, Mbugua ET. Factors influencing choice of paediatrics as a career among medical students at the University of Nairobi, Kenya. *S Afr J Child Health* 2010; 4(3): 70-72
22. Dorsey ER, Jarjoura D, Rutecki GW. The influence of controllable lifestyle and sex on the specialty choices of graduating US medical students, 1996-2003. *Acad Med.* 2005; 80:791-796.
23. Buddeberg-Fischer B, Klaghofer R, Abel T, Buddeberg C. The influence of gender and personality traits on the career planning of Swiss medical students. *Swiss Med Wkly* 2003; 133(39-40): 535-540
24. Gjerberg E. Gender differences in doctors' preference – and gender differences in final specialisation. *Soc Sci Med.* 2002; 54:591-605.
25. Redman S, Saltman D, Straton J, Young B, Paul C. Determinants of career choices among women and men medical students and interns. *Med Educ.* 1994; 28(5): 361-371.
26. Moorkamp M. Women paediatricians: what made them choose their career? *J Health Organ Manag.* 2005; 19:478-493.
27. Madu AJ, Ubesie A, Madu KA, Nonyelu C, Ibegbulam OG. Medical Specialist Preferences and Reasons among Fresh Nigerian Interns. *Ann Med Health Sci Res.* 2014; 4(3): 223-227
28. Shin JH, Kinnunen TH, Zarchy M, Da Silva JD, Chang BM, Wright RF. Factors influencing dental students' specialty choice: a survey of ten graduating classes at one institution. *J Dent Educ.* 2015;79(4): 369-377.
29. Yoon JD, Ham SA, Reddy ST, Curlin FA. Role Models' Influence on Specialty Choice for Residency Training: A National Longitudinal Study. *J Grad Med Educ.* 2018; 10(2): 149-154.