RESEARCH ARTICLE

Factors affecting specialty choice of postgraduate dental residents in Karachi, Pakistan

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Abstract

Objective: To identify factors that influence the choice of specialty of dentistry postgraduate residents in an urban setting.

Method: The cross-sectional analytical study was conducted from April to May 2020 at health centres approved for the Fellowship of the College of Physicians and Surgeons training in Karachi, and comprised dental postgraduate residents. Data was collected using a questionnaire distributed using Google Forms. Residents were asked to rate factors that influenced their decision to join their clinical specialty on a 3-point Likert scale. Items were based on the basis of anticipated clinical experiences, specialty-specific factors, personal preferences, and possible constraints. Data was analysed using SPSS 23.

Results: Of the 51 subjects, 39(76.5%) were females and 12(23.5%) were males. The overall mean age was 27.7±2.17 years. Besides, 27(52.9%) subjects were from public-sector centres and 24(47.1%) from private-sector centres. Of all the residents, 44(86.3%) chose their specialty because of inclination to treat complex cases, while 43(84.3%) were interested because of the broad range of cases, and 39(76.5%) made their choice because of the reputation of the respective supervisors and institutions. Also, 43(84.3%) residents did not consider the expiry of their fellowship part one exam deadline, or unavailability of a training slot as a specific reason to select a specialty. Compared to males, significantly more females opted for a specialty if it eventually provided career opportunity as faculty ($p<0.05$).

Conclusion: Factors that greatly influenced the residents' choice for postgraduate training specialty were related to anticipated clinical experiences.

Keywords: Career choice, Dental specialties and sub-specialties, Postgraduate training, Influencing factors, Motivational. (JPMA 72: S-20 [Suppl. 1]; 2022)

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Introduction

Postgraduate (PG) training in various specialties of dentistry is well established globally as well as in Pakistan. A large number of dental students graduating from different institutions are interested in and actively pursuing PG degrees in basic and clinical dental sciences. Studies have shown that as a global phenomenon, dental graduates prefer to continue their education towards a PG degree.[1-3] Among the PG degrees available to dental graduates in Pakistan, the Fellowship of the College of Physicians and Surgeons (FCPS) offered by the College of Physicians and Surgeons Pakistan (CPSP) is a well-established and prestigious programme whose credentialing holds significant repute and standing in the country as well as globally. Training programmes in major clinical specialties of dentistry currently being offered by the CPSP in different training institutions across Pakistan include Operative Dentistry, Orthodontics, Oral Surgery, Prosthodontics and Periodontology.[4]

A number of factors may influence the choice of residents to join a particular PG residency programme in a specific specialty. It is essential that such factors be explored in order to evaluate the rationale behind such a decision. Such analysis is important as the career choice of students influences their future work productivity and motivation.[5] A few studies have evaluated the influencing factors determining the choice of specialty in the field of medicine for PG residents, highlighting multiple reasons based on a wide spectrum of motivational determinants, like personal preferences, lifestyle, practice considerations and specialty of their mentors.[6-9] A study[8] done on internal medicine residents reported the difference observed between genders related to these factors. Similarly, another study[7] observing the reasons behind the residents for choosing a specialty reported a difference between males and females in terms of motives for selecting a training specialty. In the local context, some research has been conducted to observe the preference of PG specialty that final year dental students would consider in the future.[10,11] However, there is scant data regarding factors influencing specialty choice of PG dental residents already enrolled in specialisation programmes. The current study was planned to identify the factors that influence the choice of specialty training of PG residents pursuing FCPS in different training institutions in an urban setting.

Subjects and Methods

The cross-sectional analytical study was conducted from April

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to May 2020 at health centres approved for the FCPS training in Karachi. After approval from the institutional ethics review board of Jinnah Sindh Medical University (Ref no. JSMU/IRB/2019/-198), data was collected using a structured questionnaire which was developed in the light of published studies[6-9] with similar methodologies, recording the factors influencing the choice of specialty of PG residents. The relevant studies were downloaded and all items of each questionnaire were reviewed. The common themes were consolidated to develop the questionnaire with items based on external and internal influencing factors, where responses could be recorded on a 3-point Likert scale. The questionnaire comprised two sections. The first section was designed to acquire consent and collect information regarding the demographics of the respondents, including age, gender, their association with public or private institution along with their level of residency and specialty. Identifiers, such as the names of the respondents and their institutions and their email addresses were optional. The second section of the questionnaire gathered data regarding factors and determinants that influenced the respondents to join their current clinical specialty for PG training. The items were based on themes, such as anticipated clinical experiences, specialty-specific factors, training centre/institution and programme-related factors, influences, post-training incentives and benefits, personal preferences and possible constraints.

All dental PG residents from first to final year of residency involved in FCPS training at institutions approved by the CPSP as FCPS training centers were approached. The institutions included the Altamash Institute of Dental Medicine, Aga Khan University Hospital, Dr Ishrat-ul-Ebad Khan Institute of Oral Health Sciences, Fatima Jinnah Dental College, Hamdard College of Medicine and Dentistry, PNS Shifa, Sindh Institute of Oral Health Science, Karachi Medical and Dental College, Alvi Dental Hospital, Liaquat College of Medicine and Dentistry, Ziauddin Dental College and the Jinnah Postgraduate Medical Centre. The PG residents who did not give consent and those who had switched their specialty during their training period for any reason were excluded.

The total number of post graduate students enrolled in residency programmes in the city are approximately 204. This estimate was obtained by official correspondence e-mail to CPSP. The sample size was calculated using OpenEpi 3.01 for epidemiological statistics.[12] As we had no specific outcome target, the sample size was calculated on the assumption that the anticipated maximum frequency of outcome factor was 50%.[13] The required sample size at 90% confidence limit came out to be 66 post graduate students.

The questionnaire was piloted by administering it by hand to approximately 10% of the total study population fulfilling the inclusion criteria. These dental residents were not included in the final sample. In the light of the feedback and observations during the pilot study, the questionnaire was modified. The finalised questionnaire was uploaded on Google Forms, and the link for the questionnaire was shared with all residents fulfilling the inclusion criteria by non-probability purposive sampling. Any form with missing data was excluded. Informed consent was taken by all the study participants as an initial part of the questionnaire.

Data was analysed using SPSS 23. Mean and standard deviations were calculated for continuous variables, while for categorical variables, frequencies and percentages were calculated. Cross-tabulation was done of factors influencing specialty choice to several covariates, like gender, specialty choice, and type of institute. $P<0.05$ was considered statistically significant.

Results

Out of the 66 forms, 51 were returned filled completely, giving a response rate of 77.3%. Out of 51, 39(76.5%) were females and 12(23.5%) were males. The overall mean age was 27.7±2.17 years. Besides, 27(52.9%) subjects were from public-sector centres and 24(47.1%) were from private-sector centres. The largest group of PG residents was associated with Operative Dentistry 33(65%) (Figure-1), and 17(33%) were in the first year of their training (Figure-2).

Of all the residents, 44(86.3%) chose their specialty because of inclination to treat complex cases, while 43(84.3%) were

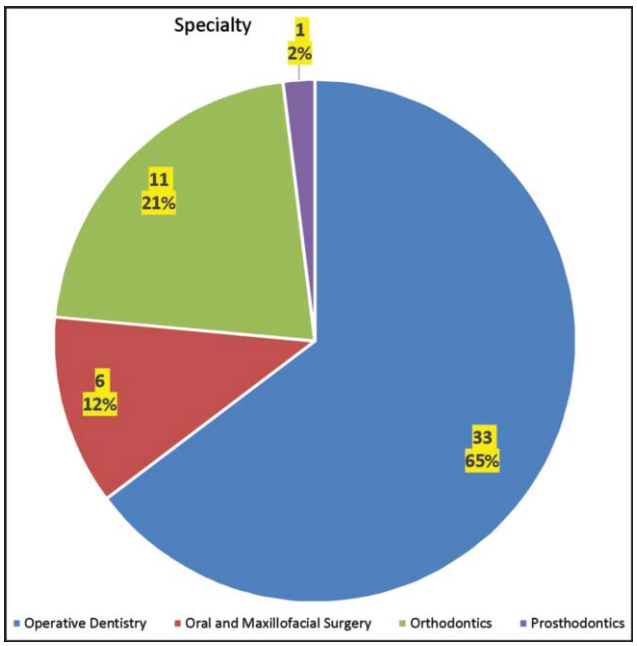

Figure-1: Distribution of Fellowship of the College of Physicians and Surgeons (FCPS) residents' specialties of training.

Table-1: Factors that motivated residents when choosing a clinical dental specialty.

Factor	Agree n (%)	Neutral n (%)	Disagree n (%)
My chosen specialty has great research opportunities	42 (82.4)	7 (13.7)	2 (3.9)
I was always interested in this specialty	39 (76.5)	8 (15.7)	4 (7.8)
I was influenced by positive experiences during BDS	37 (72.5)	4 (7.8)	10 (19.6)
I was influenced by my mentor/teacher	37 (72.5)	5 (9.8)	9 (17.6)
I wanted to work in a team	36 (70.6)	8 (15.7)	7 (13.7)
There is a lot of prestige in my chosen specialty	35 (68.8)	13 (25.5)	3 (5.9)
I wanted to have fixed working hours	35 (68.6)	9 (17.6)	7 (13.7)
I did not want work-related commitments after hours	33 (64.7)	8 (15.7)	10 (19.6)
It is easier to set up my practice independently	32 (62.7)	11 (21.6)	8 (15.7)
Training was conducted at a centre convenient for me	29 (56.9)	6 (11.8)	16 (31.4)
It will allow me more time to spend with my family	26 (51.0)	11 (21.6)	14 (27.5)
There is high income in my chosen specialty	26 (51.0)	16 (31.4)	9 (17.6)
It offers good career opportunities for a faculty position	26 (51.0)	13 (25.5)	12 (23.5)
I was impressed by structure of specialty programme	25 (49.0)	12 (23.5)	14 (27.%)
I was influenced by my family/ peers	21 (41.2)	9 (17.6)	21 (41.2)
It offers good career opportunities abroad	20 (39.2)	21 (41.2)	10 (19.6)
I didn't want too much blood in my practice	18 (35.3)	11 (21.6)	22 (43.1)
I felt there are less specialists in my chosen specialty	15 (29.4)	10 (19.6)	26 (51.0)
It offers quicker promotion chances as faculty	10 (19.6)	28 (54.9)	13 (25.5)

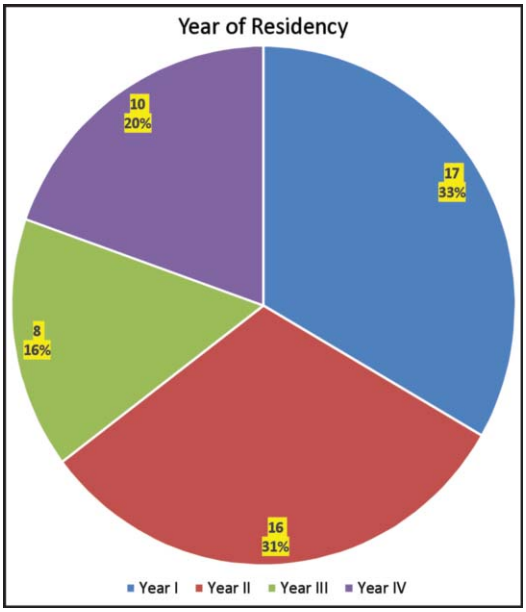

Figure-2: Level of residency of the participants.

Table-2: Factors for making the choice according to the specialty of the residents.

Clinical Specialty	Agree n (%)	Not sure n (%)	Disagree n (%)	p-value
I did not want to work emergency shifts				
Operative Dentistry	13 (39.4)	11 (33.3)	9 (27.3)	0.02*
Oral and Maxillofacial Surgery	0 (0)	0 (0)	6 (100)	
Orthodontics	3 (27.3)	5 (45.4)	3 (27.3)	
Prosthodontics	1 (100)	0 (0)	0 (0)	
I was always interested in this specialty				
Operative Dentistry	25 (75.7)	6 (18.2)	2 (6.1)	0.03*
Oral and Maxillofacial Surgery	6 (100)	0 (0)	0 (0)	
Orthodontics	8 (72.7)	2 (18.2)	1 (9.1)	
Prosthodontics	0 (0)	0 (0)	1 (100)	
I wanted the opportunity to treat complex conditions/cases				
Operative Dentistry	28 (84.8)	3 (9.1)	2 (6.1)	0.007*
Oral and Maxillofacial Surgery	6 (100)	0 (0)	0 (0)	
Orthodontics	10 (90.9)	1 (9.1)	0 (0)	
Prosthodontics	0 (0)	0 (0)	1 (100%)	
I wanted to encounter a broad range of conditions to treat				
Operative Dentistry	27 (81.2)	3 (9.1)	3 (9.1)	0.03*
Oral and Maxillofacial Surgery	6 (100)	0 (0)	0 (0)	
Orthodontics	10 (90.9)	1 (9.1)	0 (0)	
Prosthodontics	0 (0)	0 (0)	1 (100)	

* p <0.05 was taken as statistically significant. n: number of postgraduate residents.

interested because of the broad range of cases, and 39(76.5%) made their choice because of the reputation of the respective supervisors and institutions. Also, 43(84.3%) residents did not consider the expiry of their fellowship part one exam deadline, or unavailability of a training slot as a specific reason to select a specialty (Table-1).

There was significant difference in a few of the motivational factors among the residents of different clinical specialties (Table-2). Compared to males 2(16.7%), significantly more females 24(61.5%) opted for a specialty if it eventually provided career opportunity as faculty (p<0.05).

Discussion

The current study is the first in the local context that assessed the factors that PG residents considered when choosing a clinical dental specialty. Studies have been conducted on dental graduates in other parts of the world identifying factors behind specialty choice.[10,11,14-16] Research has also been conducted locally in dental colleges and among graduates of Karachi to assess the motivational factors of undergraduate students to opt for dentistry as a career.[17,18] In Pakistan, there are around 29,000 registered dental practitioners. The country has an estimated total population of 220 million, thus there is a dentist-to-population ratio of 1:7500. Specialist clinical dental practitioners are far less; an estimated number is only 10% of the total registered dentists i.e. 2900. This is because there are minimal PG options with limited seats available nationwide.[19] Thus, it is imperative that the motivational factors behind the choice of a specialty are considered before the residents are inducted so that they do not suffer from professional discontent during or at the completion of their residency training or may have to switch specialty midway if opportunity arises. Such practices would lead to inefficient

training programmes and practices, with erosion of the required number of dental specialists for serving the community.

There was significantly higher number of female participants in the current study. This finding is similar to studies done in Turkish and Thai dental schools.[14,21] A plausible explanation could be the overall greater number of female students pursuing dentistry in Karachi.[17] All specialties had more respondents that were female. A statistically significant difference was only recorded where a larger percentage of females (61.5%) compared to males (16.7%) agreed that they chose the PG specialty if there were chances that it may provide a better career opportunity as faculty in subsequent years. Other than that, all participants had similar motivational factors to pursue specialty of their choice irrespective of gender in the current study.

A positive trend was seen to the effect that PG residents were looking forward to clinical experiences specific to the specialty chosen by them, indicating that the learning offered by a particular specialty seems to be the primary reason for the choice. This would ensure continued, motivated engagement and deeper learning of the trainees as they progress in their training. Satisfaction in providing care in specialty of choice was one of the most agreed upon reason in a study done among residents in the United States.[21]

The study participants expressed a deep interest in research opportunities that their chosen specialty provided. Research was quoted as being an essential factor motivating the trainees to join their preferred specialty. This is a positive inclination, indicating that the trainees are aware of the importance of research and are motivated in joining a specialty where research avenues can be pursued. Even though FCPS is primarily a clinical degree, there should be an emphasis on the component of research since such measures promote evidence-based clinical practices.[22,23]

Related to the training institution and the structure of training programme, the motivating factor was the reputation of the training institution itself and of the training supervisor because supervisors who takes special interest in guiding and enhancing the learning and skills of the residents are the most sought after.[23] Prestige of the specialty was also a significant factor for specialty choice for a large number of residents. This is similar to earlier findings.[10,14,15]

The positive influences of mentors were an important motivating factors in the current study which was in line with literature16. Such positive practices need to be promoted at the undergraduate level as well.[17,18,20,25] The influence of family members and spouses was not seen to have a significant impact towards specialty choice in the current study, which was in contrast to earlier reports.[26] This highlights the importance of conducting similar studies in different demographical settings as influencing factors for specialty choice may vary greatly.[26,27]

Responses related to career and financial opportunities perceived after the completion of PG training depicted the prospect of setting independent private practice as the most significant factor in specialty choice. This was followed by the chance of becoming a supervisor to train other residents in the same specialty. The financial returns and possible faculty position were the other considerations. The interest of the current trainees in becoming supervisors later in their career depicts the desire to transfer their knowledge and skill to future trainees. This is a positive tendency as this would help to perpetuate the specialty practices in dentistry.[14,28]

The personal interest of the trainees in the specialty they joined also ranked significantly high among the responses. Similar findings were observed in other studies.[11,13] Other noteworthy factors were related to the interest in working as part of a team and those mentioning the time duration of training-related activities.[15] Trainees also considered the after-work commitments and work-life balance as essential factors for specialty choice. An important consideration leading to this trend could be that the majority of the participants were female, and had multiple commitments related to family. However, despite this gender determinant, a study assessing the factors influencing medical students' choice of specialisation globally reported lifestyle and work-life balance as the top most governing elements, followed by interest in discipline.[2,29]

Contrary to the popular belief in Pakistan that since slots for FCPS training in dentistry are limited, potential trainees often opt for a specialty programme which is not their primary interest, the current study had a large number of participants who reported otherwise. Similarly, the impeding expiration date of of FCPS part one exam[17] was also not reported as an influencing factor for specialty choice for most residents. This is an encouraging outcome, since these factors should not determine a trainee's selection of a field for specialty training. If this were the case, the lack of motivation and interest could result in poor performance during training and would subsequently affect clinical practice and patient care.[30]

In terms of limitations, the current study comprised residents undergoing FCPS training in Karachi only, and, therefore, the results cannot be generalised. In addition, only trainees of FCPS programme were included, while the residents of other PG programmes were left out. The sample size was also small, and the majority of responses came from residents training in Operative Dentistry.

Conclusion

Factors that greatly influenced the residents' choice for postgraduate training specialty were related to anticipated clinical experiences. Factors which the residents reported to have minimal influence on their decision-making included the potential lack of training slots in the specialty of primary interest as well as the impending expiry of the validity of their FCPS part one examination.

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Conflict of Interest: None.

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References

1. Sofola OO, Uti OG, Akpene OI. Does exposure to dental education change the perceptions of Nigerian students to dentistry as a profession? Eur J Dent Educ 2008;12:159-62. doi: 10.1111/j.1600-0579.2008.00517.x.
2. Stewart FM, Drummond JR, Carson L, Hoad Reddick G. A survey of dental school applicants' career intentions and the balance with family life. Br Dent J 2005;198:713-20. doi: 10.1038/sj.bdj.4812391.
3. Weaver RG, Haden NK, Valachovic RW. Annual ADEA survey of dental school seniors: 2002 graduating class. J Dent Educ 2002;66:1388-404.
4. Khan FR. Dilemma of dental graduates seeking specialty training in Pakistan: MDS vs. FCPS. J Pak Dent Assoc 2017;26:44-45.
5. Kazi AS, Akhlaq A. Factors affecting students' career choice. J Res Reflect Educ 2017;11:187-96.
6. Gautam AP, Paudel BH, Dhakal SR. What influences residents in selecting their subject in post-graduation? Health Renaissance 2013;11:68-73.
7. van der Horst K, Siegrist M, Orlow P, Giger M. Residents' reasons for specialty choice: influence of gender, time, patient and career. Med Educ 2010;44:595-602. doi: 10.1111/j.1365-2923.2010.03631.x.
8. West CP, Drefahl MM, Popkave C, Kolars JC. Internal medicine resident self-report of factors associated with career decisions. J Gen Intern Med 2009;24:946-9. doi: 10.1007/s11606-009-1039-0.
9. Garibaldi RA, Popkave C, Bylsma W. Career plans for trainees in internal medicine residency programs. Acad Med 2005;80:507-12. doi: 10.1097/00001888-200505000-00021.
10. Nwhator SO, Olatosi O, Ashiwaju MO, Isiekwe GI. Emerging trends in dental specialty choice in Nigeria. Int Dent J 2013;63:91-6. doi: 10.1111/idj.12019.
11. Kanmodi KK, Badru AI, Akinloye AG, Wegscheider WA. Specialty choice among dental students in Ibadan, Nigeria. Afr J Health Professions Educ 2017;9:21-3. DOI: 10.7196/AJHPE.2017.v9i1.670
12. Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, Version 3.01. [Online] 2013 [Cited 2022 January 10]. Available from URL: https://www.openepi.com/SampleSize/SSCohort.htm
13. Al-Hallak KR, Nassani MZ, Heskul MM, Doumani MD, Darwish M. Reasons for choosing dentistry as a career among dental students in Saudi Arabia. Eur J Dent 2018;12:275-80. doi: 10.4103/ejd.ejd_335_17.
14. Hatipoglu O. Factors that affect the career and specialty preferences of dentistry students in Turkey. J Clin Diagn Res 2019;13:06-11. DOI: 10.7860/JCDR/2019/41282.12934.
15. Sharma V, Gupta N, Arora V, Gupta P, Mehta N. Factors affecting future speciality choice among dental students in Haryana. J Sci Dent 2017;7:12-7.
16. 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;79:369-77.
17. Lone MA, Lone MM, Lone MA, Shaikh MS, Khan F, Soomro AH. Motivational factors for pursuing dentistry as a profession in colleges of Karachi, Pakistan. J Pak Med Assoc 2020;70:1393-7. doi: 10.5455/JPMA.33126.
18. Yousuf W, Kazmi SMR, Quraeshi S, Khan M. Motivation and future intentions of dental students in Karachi, Pakistan. Pak J Med Res 2019;58:26-30.
19. Shahid A, Khan M, Saeed S, Shah B, Qureshi NR, Najam A. Obscure state of dental graduates in Karachi, Pakistan. J Oral Hyg Health 2020;8:e255. Doi: 10.4172/2332-0702.1000255.
20. Mitrakul K, Asvanund P, Kitisubkanchana J. Dental graduates and dental student's choice of specialties and factors influencing specialty training selection. M Dent J 2014;34:338-46.
21. 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 2012;76:562-73.
22. Black AT, Balneaves LG, Garossino C, Puyat JH, Qian H. Promoting evidence-based practice through a research training program for point-of-care clinicians. J Nurs Adm 2015;45:14-20. doi: 10.1097/NNA.0000000000000151.
23. Kishore M, Panat SR, Aggarwal A, Agarwal N, Upadhyay N, Alok A. Evidence based dental care: integrating clinical expertise with systematic research. J Clin Diagn Res 2014;8:259-62. doi: 10.7860/JCDR/2014/6595.4076.
24. In: Cooper N, Forrest K, eds. Essential guide to educational supervision in postgraduate medical education 1st ed. London, UK: Wiley-Blackwell Publishing Ltd / BMJ Publishing Group Ltd; 2009.
25. Blissett R, Lee MC, Jimenez M, Sukotjo C. Differential factors that influence applicant selection of a prosthodontic residency program. J Prosthodont 2009;18:283-8. doi: 10.1111/j.1532-849X.2008.00407.x.
26. Halawany 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. doi: 10.1016/j.sdentj.2016.12.001.
27. Karibe H, Suzuki A, Sekimoto T, Srithavaj ML, Iamaroon A, Warita S, et al. Cross-cultural comparison of the attitudes of dental students in three countries. J Dent Educ 2007;71:1457-66.
28. Hashemipour MA, Navabi N. Investigation of factors affecting study in various fields of specialization in dental students of South-East Iran. Iran J Med Educ 2012;11:979-82.
29. Levaillant M, Levaillant L, Lerolle N, Vallet B, Hamel-Broza JF. Factors influencing medical students' choice of specialization: A gender based systematic review. EClinicalMedicine 2020;28:e100589. doi: 10.1016/j.eclinm.2020.100589.
30. Bhatti NM, Naveed T. Correlation between course interest, self-direction and assessment scores for determining motivation of medical and dental students in Pakistan. Pak Oral Dental J 2017;37:273-7.