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Postgraduate specialties interest, career choices and qualifications earned by male dentists graduated from King Saud University

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Abstract *Objectives:* To study the career development of male graduates of King Saud University (KSU), College of Dentistry in terms of pursuit of postgraduate dental education, higher degrees or Board Certification, choice of universities and countries of study, and place of work after qualification.

Methods: A questionnaire survey was carried out through face to face or telephone interview among 666 KSU graduates of 1982–2004.

Results: 80% (532 graduates) response rate. (77%) finished postgraduate dental education. 17% specialized in Prosthodontics, 16% in Saudi Board Advanced Restorative Dentistry, 14% in Advanced General Dentistry, 10.5% in Orthodontics, 10% in Oral and Maxillofacial Surgery, 8.3% in Pediatric Dentistry, 7.7% in Endodontics, 6% in Periodontics, 5.5% in Operative Dentistry, 5% in other Specialties. 61% had a Master's degree and 16% had a Doctorate degree.

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23% had Board Certificates and 8% had a Fellowship Certificate. (78%) are working in the government, 15% at the university and 6% in private, and 19% in administrative positions.

Conclusion: Most of the dental graduates were motivated and eager to continue their postgraduate education to get either clinical specialty or academic degrees from nationally and internationally well recognized and known Universities and programs.

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1. Introduction

The College of Dentistry of King Saud University (KSU) is an integral part of the collegiate system at the University, which was founded in Riyadh, Saudi Arabia in 1957. The College of Dentistry was established in 1975 (Aldrees et al., 2008). As the first university-based dental training institution in the region, the College of Dentistry, KSU continues in training dentists who are now providing dental care throughout the country. The total number of graduates of the College of Dentistry up to year 2008 was 1712, half of whom (857) are males (Aldrees et al., 2008). More importantly, many of those graduates are now serving as faculty members in different Colleges of Dentistry throughout Saudi Arabia as well as leaders of the dental care providers both in the private, governmental civil and military institutions. KSU graduate dental education program started in 1990 and the first group graduated from the Prosthodontics Master's Degree program in June 1993 (Aldrees et al., 2008).

Postgraduate dental education (PGDE) has been defined by Weaver (1999) as an elective, personal decision to pursue additional education immediately prior to entering practice or within several years after graduation (Weaver, 1999). Bawden (1980) reported Several objectives of postgraduate dental education programs, which include the preparation of specialty practitioners who meet specific dental health needs of society that cannot be, or are not, met by the general practice segment of the dental care delivery system (Bawden, 1980), in addition to preparing individuals with advanced knowledge and skill in dentistry that may or may not limit their practice to a particular area of dentistry (Bawden, 1980). Another objective of PGE is to properly staff the faculties of the dental education system by preparing individuals for careers in teaching and research (Bawden, 1980). Last but not the least is to prepare individuals who contribute to the advancement of the knowledge base of dental science and practice and of the biomedical, physical and behavioral sciences in general (Bawden, 1980).

Postgraduate dental education programs for specialization in dentistry should be developed on a planned basis by giving appropriate weight to factors, such as the need, and the stage of professional development and related social and economic factors in a given country (Cousins, 1984). It was believed that high quality patient care can only be based upon a foundation of sound education and training, monitored by strong peer assessment (Barnard and Pendlebury, 2000). Furthermore, the dental professional must constantly improve and enlarge his or her skills level to provide the highest quality care (Paquette and Sheets, 2004).

Chan et al. (2006), in a study that investigated dentists who attended the 26th Asia Pacific Dental Congress in 2004 found that 78% of those who indicated their places of practice in Asia Pacific regions were general dental practitioners while only 22% were dental specialists and 27.7% of general dental prac-

tioners expressed their preference in clinical degree programs and (6.8%) in research degree programs (Chan et al., 2006).

In a recent study in Saudi Arabia by Ashri et al. (2007), the authors found that 90% of Saudi general practitioners were interested in continuing their higher dental education. More than half of them (54%) preferred to study abroad and 42.3% preferred to study inside the country. The Saudi Commission for Health Specialties Certification (SCHSC) programs were the most preferred higher dental education programs followed by the Master programs (Ashri et al., 2007). Participants in the study thought that the most needed specialties in Saudi Arabia were public health, followed by endodontics and oral and maxillofacial surgery. In addition, the dental specialties that Saudi general practitioners were interested in are prosthodontics, orthodontics, endodontics, operative dentistry and pediatric dentistry (Ashri et al., 2007). It was suggested that the dental services' planners and educators should direct the dental graduate who desires to continue their higher dental education by identifying, emphasizing or modifying their interest to match the needs in Saudi Arabia (Ashri et al., 2007).

When dentists practice after their graduation for a certain time, they realize that there is a further level of education that can be mastered in the quest for success in the business of dentistry (Paquette and Sheets, 2004). For those who work in government institutions, they realized that if they had a higher degree or specialty certification, they will have a better employment rank and can increase their income, which was usually supported by the government to improve their knowledge in their field. As the population of Saudi Arabia continues to increase, the dental service demand for this population will increase too. The need for specialization in dentistry is mandatory to provide high quality dental care for the population. It was decided to investigate what is the career situation and postgraduate development for the dentists who graduated from College of Dentistry, KSU. Therefore, the objectives of this study were to identify:

- The number of male graduates who proceeded to obtain postgraduate education.
- The most common specialty of interest in dentistry for those who did not continue postgraduate education.
- The specialty earned by graduate male students.
- The degree and/or type of specialty qualification earned by male graduate students.
- The countries and universities from which the male graduates obtained their postgraduate education.

2. Materials and Methods

All the 666 male graduates of the College of Dentistry, KSU from the first set of 1982 until 2004 were studied out of the

total of 857 male and female graduates. We excluded those who had graduated after 2004 to allow for a minimum of four years for continuing postgraduate education (PGE). The names and the years of the graduation for the graduates were identified from the College published records (Al-Dlaigan et al., 2007).

The questionnaire was designed to include fourteen multiple choices and written survey questions. It consisted of sections covering:

- Demographic data (name, contact number, e-mail address and year of graduation).
- Dental PGE students (having PGE or not).
- The interest to have PGE (the preferred specialty and country).
- Current practice status (place of work, title of current position and or current administrative position).
- Postgraduate qualifications (type of specialty, master degree, doctorate degree, board certificate or fellowship certificate).

Prior to undertaking the study, a pilot study for this questionnaire was carried out in the College of Dentistry, KSU on 20 graduates. The questionnaire was subsequently revised and slight modifications of the questions and format were then made.

The questionnaire survey was conducted among the selected sample through face to face interview with KSU male dental graduates at their practical locations throughout the country. Personal telephone interview was used in order to increase the response rate after obtaining the phone numbers from Saudi Dental Society, Saudi Commission for Health Specialties and classmates for each class.

All descriptive statistic tables and figures were generated to analyze the data. Closed questions as "tick box" questions were analyzed using the SPSS (version 16). Open questions, such as name of the university or other comments were analyzed manually.

3. Results

From a total number of 666 male who graduated between 1982 and 2004, 532 responded (80%). About three quarters, 407 (77%) of the respondents indicated that they had postgraduate education (Fig. 1). Out of all the respondents, 125 (23%) graduates did not have PGE yet. Only 60 (12%) were involved in PGE at the time of investigation, 39 (7%) were not interested to have PGE and 26 (4%) were interested to have PGE in future. The number of graduates who were undertaking PGE, 60 (12%) were added to the number of those who graduated, 407 (77%) came to 467 subjects which is (89%).

When the current residents were asked about the type of specialties they are enrolled in, it was found that (37%) were enrolled in Saudi Board in the Advanced Restorative Dentistry Program (SBARD), followed by orthodontics (24%), pediatric dentistry (13%), endodontics (12%), oral and maxillofacial surgery (7%), prosthodontics (5%) and periodontics (2%). Twenty-six graduate subjects were interested to have PGE but they had not decided yet what type of specialty they would want to enroll in (Table 1). The preferred countries for the residents to continue postgraduate education were in descending order KSA, USA, UK and Sweden, respectively.

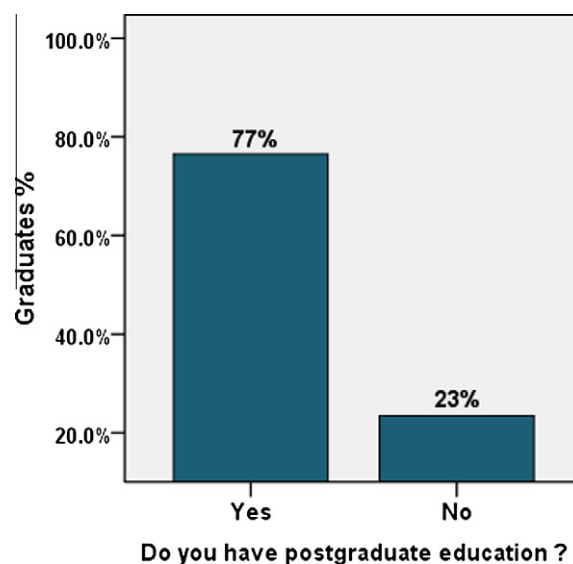


Figure 1 Percentages of graduate subject having postgraduate education.

Table 1 The current residents enrolled in different specialties.

Specialty	Percentage (%)
SBARD*	37
Orthodontics	24
Pediatric Dentistry	13
Endodontics	12
OMF Surgery	7
Prosthodontics	5
Periodontics	2

* SBARD: Saudi Board in Advance Restorative Dentistry Program.

Regarding those who already had PGE, the results showed that 67 (17%) specialized in prosthodontics, 64 (16%) in SBARD, 58 (14%) in advanced general dentistry, 43 (10.5%) in orthodontics, 39 (10%) in oral and maxillofacial surgery, 34 (8.3%) in pediatric dentistry, 32 (7.7%) in endodontics, 25 (6%) in periodontics, 23 (5.5%) in operative dentistry and 22 (5%) of the graduate students have other specialties, such as oral medicine and oral diagnosis, temporomandibular joint and others (Table 2). Only 24 (6%) had qualifications in more than one specialty.

The degree of the qualification was also investigated. The study found that two thirds, 248 (61%) of the sample who completed PGE had Master's degree (Table 3). According to the type of Master's degree, 220 (88.7%) had Master's of Science (MS), 10 (4%) had Master's of Science in Dentistry (MSD), 8 (3.2%) had Master's of Dental Surgery (MDS), 5 (2%) had Master's of Public Health (MPH), 3 (1.2%) had Master's of Science in Education (MsEd) and 2 (0.9%) had Master's of Health Services Administration (MHSA). Most of them had obtained their Master's degree from USA (60.8%), UK (18%) or KSA (10%) (Table 4). Regarding the universities of Master's degree, most of the graduates earned their Master's degree from the following universities: 25 (10%) King Saud University, 26 (10.5%) Boston University,

Table 2 Types of dental specialties earned by graduates.

Specialty	Grads (n)	Percentage (%)
Prosthodontics	67	17
SBARD*	64	16
Adv.Gen. Dent. **	58	14
Orthodontics	43	10.5
OMF Surgery	39	10
Pediatric Dentistry	34	8.3
Endodontics	32	7.7
Periodontics	25	6
Operative dentistry	23	5.5
Others ***	22	5
Total	407	100

* SBARD: Saudi Board in Advance Restorative Dentistry,

** Adv. Gen. Dent: Advance General Dentistry.

*** Others: Oral Med. & Oral Diag., TMJ, Oral &Max Fac. Radiology, Conservative Dent., Aesthetic Dentistry, Oral Path, Public Health.

Table 3 Proportion of Qualifications earned by graduates.

University	Grads (n)	Percentage (%)
Master degree	248	61
Board certificate	92	23
Doctorate degree	64	16
Fellowship certificate	34	8

Table 4 The countries, subject got master and doctorate degree from.

Country	Master		Doctorate	
	Grads (n)	Percentage (%)	Grads (n)	Percentage (%)
USA	150	60.8	43	67
UK	45	18	14	22
KSA	25	10	—	—
Sweden	10	4	—	—
Denmark	4	1.6	1	1.56
Norway	3	1.2	—	—
Germany	3	1.2	1	1.56
Canada	2	0.8	1	1.56
Holland	2	0.8	—	—
France	1	0.4	—	—
Iraq	1	0.4	—	—
Jordan	1	0.4	—	—
Egypt	1	0.4	—	—
Australia	—	—	1	1.56
Switzerland	—	—	1	1.56
Syria	—	—	1	1.56
Soudan	—	—	1	1.56
Total	248	100	64	100

14 (6%) The University of Alabama at Birmingham (UAB), 13 (5.2%) Tufts University, 12 (4.5%) University College London, 9 (3.6%) University of Michigan, 8 (3.2%) Indiana University (Table 5). Sixty-seven (27%) did not specify the names of their universities.

Regarding other degrees, such as Doctorate degree, we found that 64 (16%) had Doctorate degrees as follows: 41

Table 5 The Common Universities which graduates have their master and doctorate degree graduated from.

University Name	Master degree		Doctorate degree	
	Grads (n)	Percentage (%)	Grads (n)	Percentage (%)
Boston U	26	10.5	15	23
KSU	25	10	—	—
UAB	14	6	—	—
Tufts	13	5.2	—	—
UCL	12	4.5	4	6.2
U. of Michigan	9	3.6	6	7.8
Indian U	8	3.2	—	—
Harvard U	—	—	7	11

KSU: King Saud University, UAB: University of Alabama, at Birmingham, UCL: University College of London

(64%) had Doctor of Philosophy (PhD), 9 (14%) had Doctor of Science in Dentistry (DScD), 7 (11%) had Doctor of Medical Science (DMSc), 6 (9%) had Doctor of Public Health (Dr. PH), and 1 (2%) has Doctorate of Medical Dentistry (DMD). Most of them had obtained their Doctorate degrees from USA (67%) or from UK (22%) (Table 4). Regarding the universities of Doctorate degree, most of the graduates earned their Doctorate degrees from the following universities: 15 (23%) from Boston University, 7 (11%) from Harvard University, 6 (7.8%) from University of Michigan, 4 (6.2%) from University College London (Table 5) while 11 (17%) did not indicate the names of their universities.

Of the 407 respondents, 92 (23%) had board certificates. They had obtained their board certificates from the following countries: 66 (72%) from KSA, 18 (20%) from USA, 3 (3%) from Sweden, 3 (3%) from Canada and 2 (2%) from Germany (Table 6). Regarding the fellowship certificate, it was found that 34 (10%) had fellowship certificates. They had obtained their fellowships from the following countries: 22 (64%) from USA, 5 (15%) from UK, 4 (12%) from Canada, 2 (6%) from KSA and 1 (3%) from Australia (Table 6).

With respect to place of work, title of current position in the academic or clinical field as well as current administrative position, more than three quarters (78%) of the respondents are working in government clinics, 15% in University clinics and 6% in private clinics as the main place of work. The results indicated that 15% of the graduates were holding academic ranks, from these figure 16% of the respondents holding academic ranks were professors, 19% associate professors, 50% assistant professors, 5% lecturers and 10% demonstrators.

Table 6 The countries, graduate got board degree and fellowship program in dentistry from.

Country	Board degree		Fellowship program	
	Grads (n)	Percentage (%)	Grads (n)	Percentage (%)
KSA	66	72	2	6
USA	18	20	22	64
Canada	3	3	4	12
Sweden	3	3	—	—
Germany	2	2	—	—
UK	—	—	5	15
Australia	—	—	1	3
Total	92	100	34	100

On the other hand, those who held clinical ranks were mostly consultants 238 (45%), specialists 169 (32%), general practitioners 57 (11%) and residents in training programs 60 (12%). Only 100 (19%) of the respondents are currently in administrative positions.

4. Discussion

The response rate of (80%) was satisfactory due to the limitations for this type of study which required more detailed information about graduates of over 28 years ago when the first group graduated from College of Dentistry, King Saud University. We were hoping to cover the entire 666 male graduates from the year 1982 to 2004, but unfortunately there were several limitations, such as getting the contact number for each graduate which was really one of the hardest steps during the study. At times, even when we got the contact numbers, there were either no answers or willingness to give detailed information. Considerable detailed information about the graduates was obtained from the Saudi Dental Society memberships list, the Saudi Commission for Health Specialties and some classmates for each group. The sample covered all the 22 groups with a fair and reasonable representation.

The high percentage (77%) of the sample who obtained PGE leading to gaining either clinical specialty or academic degrees, such as Master's degree and Doctorate degree was unexpected. Adding the percentage of those who are currently enrolled in PGE (11%) to the percentage of those who completed PGE (77%), meant 89% soon. These results indicate that the large percentage of KSU dental graduates were motivated, enthusiastic and eager to continue studying and are optimistic to obtain a lifelong education. On the different specialties of interest for the current residents, the majority of residents wished to obtain SBARD (37%). This result indicated that the board program was the most preferred higher dental education program, which is in agreement with the study of Ashri et al. (2007). About 24% were wishing to obtain specialty in Orthodontics, which is close to the findings of Drugan et al. (2004) who investigated the current working patterns and future career aspirations of specialist trainees in dentistry.

The dental specialties recognized by American Dental Association at different times beginning in 1947 are oral and maxillofacial surgery, pediatric dentistry, orthodontics and dentofacial orthopedics, prosthodontics, periodontics, oral and maxillofacial pathology (1949), dental public health (1950), endodontics (1963), oral and maxillofacial radiology (1999) as described by Neumann and Nix (2002). It was found that prosthodontics and orthodontics were the most preferred among the participants. These findings are in agreement with Ashri et al. (2007) who found that Saudi general practitioners were mostly interested in prosthodontics and orthodontics, respectively. The uncommon specialties attracted those who wanted to work in the academic field, suggesting that interest was not limited to the more popular specialties. It was found that 248 had a Master's degree, including those who had more than one Master's degree. The Master's of Science degree was the common type of degree obtained by the graduates. Leggate and Russell (2002) study reported similar findings among Master's degree holders among Scottish dentists. The majority of Master's degree holders in the study obtained their degrees from USA and UK, respectively. This may be due to several factors which encouraged the graduates to study in USA and

UK, such as the curriculum of the College of Dentistry, KSU which is close to the American and British dental schools system, the language of study which is English, the interest of the students and the greater chance of acceptance in these two countries. Also for the Doctorate degree, the majority of the graduates obtained their degrees from USA and UK (Table 6). However, Saudi Arabia was the third country from which the students got their Master's degree. The results showed that our graduates obtained their Master's degree from 43 Universities in 14 countries, which indicated that the graduates of College of Dentistry at KSU were internationally recognized.

Sixty-four also obtained a doctorate degree in addition to the Master's or the specialty. Although a doctorate degree is more likely to be desired by those who expected to be in an academic environment, some of them actually were working in non-academic institutions. Doctor of philosophy (PhD) was the major type obtained by the graduates from 21 Universities in 9 countries. This also indicated a measure of international recognition of the graduates from College of Dentistry, KSU. Since 10 years ago when the Saudi Commission for Health Specialties established the program of SBARD, KSU graduates become interested in joining this program and our results showed that this program was the most attractive one to the graduates.

Recently, Saudi Commission for Health Specialties established other six dental board specialist programs, which we think may be more attractive for the KSU students to enroll in. The results also showed that the graduates got board certificates from countries other than Saudi Arabia. Regarding fellowship certificate, only a few (8%) got fellowship certificates, which indicated that the fellowship certificate was the least attractive postgraduate qualification to the graduates. Three quarters of the graduates were working in government institutions. This could be due to the greater remuneration in government institutions.

Those who were in academic dentistry appeared eager to get promoted, of which 85% had reached high academic ranks of Assistant Professor, Associate Professor and Professor, respectively.

Clinical ranks of most of the 238 graduates were consultants (45%) in different specialties in dentistry. Newton et al. (2000) investigated the career development of male practitioners and they found that high percentages of those who were working in hospitals were consultant. Our findings are similar.

5. Conclusion

Most of the dentists who graduated from College of Dentistry, King Saud University were motivated and eager to continue their postgraduate education to get either clinical specialty certification or higher academic degrees from nationally or internationally well recognized universities to improve their career and self esteem.

6. Recommendations

Dental schools should devote considerable time and effort in compiling information on PGE programs, counseling students, and providing them with information that will assist them in making career decisions. The college should have a graduates

affair unit to update the information of the graduates about their interest, place of work, the earned postgraduate qualifications and sharing their experiences with the newly graduated students.

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