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Original Research Article

The Attitude of Dental Graduates toward Clinical Education on Pediatric Dentistry

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Abstract: The aim of dentistry education is training competent, committed and passionate dentists. Evaluation of the educational curriculums is one of the main duties of university of medical science. The aim of this study was the evaluation of dental graduates' attitude toward pediatric dentistry's clinical education. The Method in this cross-sectional descriptive analytic study was performed on 234 dental graduates of Kerman University of medical science. A questionnaire was used to collect data. The questionnaire consisted of two parts, the demographic information of the participants (age, gender, graduation year, duration and location of clinical activities) and thirteen questions about the graduates' attitude towards the clinical education of pediatric dentistry. The collected data was analyzed with Spss18 software, t-test and linear regression analysis and the significance level was 5%. The Results of the 234 dental graduates, who participated in this study, 54.7% were male and 45.3% were female. The mean age of the participants was 33.12 ± 7.19 years old. The mean of total score of the participants' attitude was 60.44 ± 15.60. 35.9% of the graduates stated that they were well educated on indication and extraction of children's deciduous and permanent teeth. 35% had a positive attitude toward the education on amalgam restorations for deciduous and permanent teeth. There was no significant difference between attitude of dental graduates with gender, age, years of experience and years after graduation. (P> 0.05) in Conclusion: The results of this study showed Kerman dental graduates had a positive attitude toward clinical education of preventive dentistry and pulp therapy in children .but there were lack of dental graduate proficiency in preventive Orthodontic treatment and management of permanent traumatized teeth.
Keywords: attitude, dental graduate, pediatric dentistry, clinical education

INTRODUCTION

One of the most important health problems in the world are oral and dental diseases. Therefore, training competent, committed and passionate dentists is one of the educational priorities of medical sciences universities. Paying attention to the quality of training the human resources required to manage and provide healthcare services is of particular importance in every society. In fact, dentistry is a unique academic discipline and clinical education is the main concern for this discipline. The skills that the students acquire through clinical education depend on the educational program of the university where they study [1]. Dentistry is a discipline that requires complete understanding of a broad range, which consists of healthcare and basic sciences, accompanied with trainings specific to oral and dental sciences [2].

Dentists' attitude towards clinical treatments affects their clinical decision- making. Their attitude is completely dependent on the clinical education method, so that there is a significant relationship between knowledge, attitude and practice of dentistry in the clinics [3]. Dentists, as dentistry discipline learners, can play a valuable role in providing feedbacks and comments on modification and revision of the curriculum and improvement of the clinical education setting [4-6]. Performing dental work on children needs

special skills, which requires the dentists to be perfectly trained on the matter in order for them to be able to work at the clinics with a positive attitude. Pediatric dentistry is one of the branches of dentistry, the students acquire the skills such as; controlling children's behaviors, fluoride therapy and fissure sealant, pulp treatment, restoration and the management of traumatized deciduous and permanent teeth. According to the reports of World Congress, dental education is a complicated, stressful and energy consuming of education [7]. It is also one of the most expensive programs in health department [8].

Efficient dental education has been considered more than a decade and it seems that it has been the main topic of some discussions such as curriculum management and clinical evaluation of the universities [9]. The efficient clinical education for dentistry students directly effects oral hygiene and oral diseases' treatment. Acquiring the qualification to perform clinical skills requires time, patience and practicing in a suitable context [10]. Clinical education in dentistry requires special attention due to the high volume of clinical education courses and its broad skill learning aspects [11].

In a research conducted by Shetty *et al.;* dentistry graduates' attitude toward the curriculum, students' motivation and confidence to perform clinical treatments after graduation and the activities they choose to do after graduation was studied. The results showed that 95% of the students were not satisfied with the curriculum and 42% of them did not have the confidence to perform clinical treatments [12].

Rafeek also evaluated the dentistry graduates' opinion about their abilities and its relationship with the curriculum. They were most capable for taking medical histories and treating dental caries and were at a disadvantage in conducting clinical research. The results of this study showed that the curriculum should change to help strengthen the dentistry students' clinical skills [13].

In the study conducted by Sajadi *et al.;* Kerman dentistry students' attitude toward the curriculum in different departments was studied. The results showed that dentistry students had a positive attitude on clinical education and there was no significant difference between their gender and grade point average with their attitude [14]. Seale *et al.;* also evaluated the clinical education procedures in the pediatric department of United States' dentistry schools. The results showed that lack of patients and professors in pediatric department of dentistry schools, therefore the students' skills in this regard are insufficient [15].

Evaluation of the curriculums is one of the main duties of medical science university. These universities' graduates' occupational competency and efficiency depends on goal achievements and curriculum of that university. The general dental graduates must be able to diagnose and treat children's oral problems and master the behavior management techniques. The evaluation of graduates' attitude towards educational methods in each dentistry school is important for improving the quality of these educational methods. Successful practice of pediatric dentistry requires proper communication skills and gaining children's cooperation in addition to clinical skills. Therefore, proper training of these dental skills is of great importance. The aim of this study was the evaluation of dental graduates' attitude toward pediatric dentistry's clinical education.

METHODS

The current study was a cross- sectional, descriptive- analytical study. The population under study was the dental graduates of Kerman University of medical science. Inclusion criteria include dentists with at least one year of experience in private sectors or clinics, and the graduates who haven't taken any specialist courses or fellowships.

A questionnaire was used to collect data. The questionnaire consisted of two parts, the first part included the demographic information of the participants (age, gender, graduation year, duration and location of clinical activities) and the second part consisted of 13 questions about the graduates' attitude towards the clinical education of pediatric dentistry. The reliability Coefficient index for the questions was between 71.0_83.0 and 79.0 overall. The Cronbach's alpha coefficient was calculated 84.0 to assess the validity of the questionnaire. The questionnaire was scored on a Likert Scale as follows: Strongly agree: 5 agree: 4 disagree: 3 strongly disagree: 2 neutral: 1

Score range was between 13 and 65. The questionnaires were completed anonymously and the collected data was only used for statistical analysis. The ethics code obtained from the ethics committee was IR.KMU.REC.1394.277. The collected data was analyzed with Spss18 software, t-test and linear regression analysis and the significance level was 5%.

RESULTS

Of the 234 dentists who participated in this study, 128 (54.7%) were male and 106 (45.3%) were female. The mean age of the participants was 33.12 ± 7.19 years old. 140 participants (59.8%) worked at the both clinics and private sectors. The mean duration of their dental practice experience was 6.83±5.74 years. The descriptive statistical results based on the demographic data are shown in table 1.

35.9% of the graduates stated that they were well educated on indication and extraction of children's deciduous and permanent teeth. 35% had a positive attitude toward the education on amalgam restorations for deciduous and permanent teeth. While, 34.2% of the participants stated that they weren't well educated on the various pulp treatments of young permanent teeth (apexogenesis and apexification). Also, 23.1% and 29.9% of the graduates were not satisfied with the education on prescription of space maintainer application methods (band and loop, lingual arch), space supervision and serial extraction principles (table 2).

In this study, the mean score of the participants' attitude was 60.44 ± 15.60; the mean score for male participants was 59.74±15.12 and 61.29± 15.89 for female. There was no significant difference between female and male participants (p = 0.40). There were also no significant statistical difference between age, years of experience and years after graduation with the obtained score (p = 0.34, p = 0.62, p = 0.10) (Table 3).

Table 1: The frequency distribution of participants based on the demographic variables

Variables		Number	Percentile
Gender	Male	128	54.7
	Female	106	45.3
Number of the Years after Graduation	60s	5	2.1
	70s	18	7.7
	80s	97	41.5
	90s	114	48.7
Place of Practice	Clinic	74	31.6
	Private Sector	20	8.5
	both	140	59.8

Table 2: The frequency distribution of responds to the questionnaire

Questions	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	number	percentile	Number	Percentile	Number	Percentile	Number	Percentile	Number	Percentile
Child behavior management technique	28	12.0	115	49.1	8	3.4	74	31.6	9	3.8
Prophylaxis and fluoride therapy	66	28.2	137	58.5	7	3.0	18	7.7	6	2.6
Sealant therapy prescription	78	36.9	133	56.8	8	3.4	12	5.1	3	1.3
Preventive resin restoration prescription	68	29.1	123	52.6	17	7.3	16	6.8	10	4.3
Treatment of traumatic deciduous teeth	23	9.8	87	37.2	12	5.1	88	37.6	24	10.3
Treatment of traumatic young permanent teeth	19	8.1	19	8.1	10	4.3	88	37.6	33	14.1
Pulp therapy of deciduous teeth (pulpectomy and pulpotomy)	81	38.2	120	51.3	13	5.6	15	6.4	5	2.1
Pulp therapy of young permanent teeth (apexogenesis and Apexification)	13	5.6	61	26.1	20	8.5	58	24.8	80	34.2
stainless steel crowns application method (SSC)	27	11.5	91	38.9	29	12.4	56	23.9	29	12.4
space maintainer application method (band and loop and lingual arch)	18	7.7	56	23.9	20	8.5	86	36.8	54	23.1
amalgam restorations in deciduous and permanent teeth	82	35.0	132	56.4	6	2.6	10	4.3	3	1.3
Extraction of deciduous and permanent teeth	84	35.9	132	60.0	0	0	15	6.4	3	1.3
Space supervision and serial extraction	15	6.4	63	26.9	15	6.4	70	29.9	70	29.9

Table 3: The relationship between demographic variables and the scores obtained from the questionnaires

Variable	Number		Mean	Standard Deviation	P.value
Gender	Male	128	59.74	15.12	0.40
	Female	106	61.29	15.89	
Time of Graduation	60s	5	72.11	23.31	0.10
	70s	18	53.25	17.43	
	80s	97	59.84	16.34	
	90s	114	60.72	13.34	
Age	Less than 30	103	60.99	14.21	0.34
	31-40	72	58.70	16.41	
	Over 40	31	63.61	15.80	
Years of Practicing Dentistry	Less than 5	138	60.73	13.71	0.62
	5-10	45	57.73	16.31	
	11-15	25	62.92	44.18	
	16-20	11	57.69	20.35	
	Over 20	9	62.27	23.00	
Place of Clinical activities	Clinics	67	60.90	15.33	0.35
	Private Sectors	20	36.64	17.18	
	Both	140	59.26	15.20	

DISCUSSION

Dentists can play a valuable role in providing feedbacks and suggestions to modify the curriculum and improve the educational environment [4-6]. This study was conducted to assess the attitude of Kerman dental graduates toward clinical pediatric dentistry trainings. The results showed that 143 of the participants (61.11%) selected agree and strongly agree for the question regarding learning children behavior management techniques. The study conducted by the European association on pediatric courses in 26 dentistry schools showed that the graduate must have learnt children behavior management techniques [16]. Based on the findings of this study, it seems that the pediatric dentistry department in Kerman dentistry school has achieved this goal.

On the methods of education and use of preventive dentistry in children in this study, 203 of the participants (86.75%) chose agree and strongly agree for fluoride therapy, 210 (89.74%) with sealant therapy and 191 participants (81.62%) with preventive resin restoration application. As it can be seen, although fluoride therapy is easy, some of the dentists are still unable to do it. The reason behind this might be that some of the dentists do not have the patience to work on children or that fluoride therapy is not acceptable for the patients' parents. Fiest et al. evaluated the use of fluoride varnish in children by the general dentists after providing information about the effects of fluoride, the results showed that the use of fluoride varnish increased significantly after these trainings [17].

Olatosi *et al.;* study in Nigeria showed that 71% of the pediatric dentists were underperforming in regards of preventing dental caries [18]. Also, the majority of the dentists in Saudi Arabia had sufficient awareness and motivation for preventive dental care, which is compatible with the current study [19]. Several guidelines and systemic reviews recommend sealant therapy to decrease dental caries [20], thus, according to the sufficient proficiency of the participants of this study in sealant therapy the decrease of dental caries in Kerman is highly probable. Among the dental caries preventive methods, alower percentile stated proficiency in preventive resin restorations. Since the application of this method is more sensitive than other methods, fewer participants can do it. In this study, only 23 participants (9.8%) were satisfied with the education of the treatments of traumatized deciduous teeth. The reason may be lack of sufficient number of patients. The proficiency was lower for treatment and management of traumatized permanent teeth compared to deciduous teeth (8.1%). The results of the study conducted by Kostopoulou et al. on evaluation of dentists' knowledge of traumatic injuries to young permanent teeth showed that 71% of the dentists had insufficient knowledge on the treatment of traumatic injuries and this study emphasizes the importance of providing proper education for dentistry students and graduates [21].

In this study 85.47% of the participants had a positive attitude toward pulpectomy and pulpotomyof deciduous teeth. It seems that one of the reasons behind this is the greater number of patients for pulpectomy

and pulpotomy treatments in pediatric departments. The findings of this study showed that only a few of the participants felt competent in regards of pulp therapy of young teeth (6.5%). This indicates that most dentists participating in this study were unable to perform the pulp therapy of young teeth. The reason might be the Long and sensitive treatment process or its specialized requirements. Given that pulp therapy of young teeth is a multi-sectoral treatment; this can also be one of the reasons behind this inability. In this study 11.5% of the participants chose strongly agree for their ability in placement of stainless steel crowns for children. Since this treatment is more expensive compared to other common restorations of deciduous teeth and requires more skills and equipment, there are fewer demands for this treatment among the general dentists. Given that the success rate of pulpotomized teeth with SSC is higher than amalgam restorations [22], more attention must be given to teaching these treatment methods to the dental students during their general courses.

Only 7.3% of participants chose strongly agree for application of space maintainers and 6.4% of participants chose strongly agree for space supervision, indicating that the few dentist have learned these methods of treatment and are capable to perform them. Since these two methods are preventive orthodontic methods, the participants' proficiency is considered low and undesirable. The reason behind it might be the low number of patients with this condition and their referral to orthodontic department. Only 3.9% of participants expressed doubts about their abilities to perform amalgam restorations on primary teeth. Since a majority of the treatments in pediatric dentistry are the routine restorations, therefore these educations and individuals' skills in this area are excellent. 91.9% of the participants were sufficiently competent in extraction of the deciduous teeth, since a large number of the participants work at the public clinics and encounter more requests regarding extraction of the deciduous teeth and are therefore more experienced in this area.
There was no significant relationship between clinical practice experience and their performance. The results were inconsistent with the results of the study conducted by San Martin *et al.;* which reported a significant relationship between work experience and participants' performance in sealant therapy [20]. There was no statistically significant difference between the participants' gender and their abilities, which is consistent with the results of the study by San Martin *et al.;* [20].

In the current study no statistical significant difference between the scores of the participants who worked at clinics and those who worked at the private sectors. However, the scores for those who worked at both the clinics and the private sectors was more than each alone. The reason might be performing more clinical activities and acquiring more experience. There was no statistically significant difference between the age groups and the obtained scores, although the participants in the age group over 40 obtained higher scores. The reason can be more work experience in this age group. Also, individuals with more clinical work experience obtained higher scores, however the difference was not significant.

CONCLUSION

The results of this study showed dental graduates had a positive attitude toward clinical education of preventive dentistry and pulp therapy in children .but there were lack of dental graduate proficiency in preventive Orthodontic treatment and management of permanent traumatized teeth. It is suggested that the curriculum be revised and modified to resolve these potential shortcomings.

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