Research Paper: *Evaluation the amount of knowledge about medical emergencies among dental interns of Guilan university medical sciences, year 1395*

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ABSTRACT

Introduction: Despite the advancement of medical sciences in diseases control and, regarding the rise in the elderly population, the number of patients with multiple internal medical conditions, who refer to a dentist, is increasing. Therefore a dentist's accurate knowledge about medical emergency is more felt. . In most life threating emergences on time implementing accurate cardiopulmonary resuscitation (CPR) can rescue the patient's life in most cases and also can prevent sudden death. Researches had shown that half of dentists over the world are unable of doing CPR.

Materials and Methods: this cross-sectional study was conducted on senior dental students of Guilan university of Medical Sciences. The questionnaire of medical emergency, after reviewing the validity and reliability was given to students. Data collected and were analyzed with 21 version of SPSS PRO, with descriptive statistics, Pearson Correlation Test, independent T test, Mann Withney U Test were analyzed.

Results: 60 senior dental students of Guilan University of medical Sciences from 70 students responded to the questionnaire (response rate 85/7%). the average and SD of their age was 25/8±4/2. Their total average course score was 15/8±1/2. In general, the mean score was 6/01±2/27(from14 score). In this study, 66/67% of students had poor knowledge. The correlation between student's average course score and knowledge about the medical emergency was significant (p=0/002, r=0/369) and the correlation between type of admission and knowledge about medical emergency was significant too.

Conclusion: According to the study, the knowledge of senior dental students of Guilan university of Medical Science were poor, which suggest the need for more emphasis on education and revision of course, as well as practical workshops.

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Introduction

Although medical science had significant progresses in controlling most of diseases, amount of patients referring to dentist with different internal diseases is growing. Approximately one third of patients who refer to dentist have systemic disease. Probability of occurrence of medical emergencies in overall is 0.08% and vasovagal syncope is most common emergences in dental office with occurrence probability of 0.07 %.(1)

Dental therapeutic procedures, local anesthesia application and load of dentistry treatment can cause medical problems and different emergences or also can exacerbate patient's systemic disease. (1,2)

If dental office staff can't manage medical emergencies which are common in dental offices, this situation can easily lead to a real disaster. So it is essential for a dentist to have enough knowledge about his common occupational emergences. (3)

Major purpose of medical emergencies managements is to maintain blood circulation especially in heart and brain as a result a dentist must have sufficient dexterity and readiness for doing a cardiopulmonary resuscitation. (4) In most life threating emergencies opportune administration of CPR can rescue the patient's life in most cases and also can prevent sudden death. (1)

Researches had shown that half of dentists over the world are unable of doing CPR. (5) In a research 21% of dentists believe that their knowledge about CPR is insufficient and 67% of them believed that they are unable to do CPR. (2)

So we decided to study the amount of knowledge about prevention and controlling medical emergencies among dental interns in regard to increase knowledge, supervision and improve dental educational system, consequently decrease dentistry students stresses of dental emergences.

Materials and Methods

Study design, population:

We performed a cross sectional descriptive study on 70 dental interns of Guilan university of medical sciences. They consist of 39(65%) student of Rasht dentistry faculty and 21(35%) students of Anzali faculty. Among 70 students, 60 students attended in our study.

Students were classified by two types of university admission: (90%) students were admitted by konkur and 6 (10%) students were admitted by abroad countries.

25(41.7%) students were male and 35 (58.3%) of students were female. Mean value and standard deviation of student's age were 25/8±4/2 and average score of their educational course was 15/8±1/2 .Youngest student was 23 years old and the oldest one was 45.

Variables and data collection:

Variables consist of age, average score of educational course, sex, faculty and type of university admission.

We designed a questionnaire that consists of 14 questions to determine student's amount of knowledge about medical emergencies. These questions are about vasovagal syncope, epilepsy, pregnancy, orthostatic hypotension, diabetes mellitus, adrenal acute insufficiency, thyroidal discrepancies, allergy, hyper ventilation, antidepressant drugs, aspiration of foreign body and cardiopulmonary resuscitation.

Validity and Reliability:

To evaluate the validity and reliability we use opinion of 12 dentistry specialists of Guilan dentistry faculty.

We used Content Validity Rate (CVR) to evaluate validity of question. CVR range was 0.5 to 1. Acceptable CVR value mean was 0.56 and just the question number13 was invalid so this question deleted and substituted by another question.

In determining Content Validity Index (CVI), least CVI was66.6% and the highest CVI was100% and the question number 13 was deleted because of having CVI fewer than 77%.

The questions with CVI rate 70% to 80%went under major revision and questions with CVI rate of 80%to 90% were revised somewhat and questions with CVI rate more than 90% remained constant.

For evaluating external and internal consistency we used a pilot test of 10 dental interns and for determining internal consistency we used Richardson coefficients 20. Amount of this coefficient was 0.82 for this study. Reliability coefficient was93.3 so this study was valid and reliable

Statistical analysis:

After data collection they entered in software SPSS version 21.To compare amount of knowledge about statistical variables mean value, standard deviation and confidence interval of %95 was used.

Amount of knowledge was considered as weak for scores less than 7,intermediate for scores 7,8 and 9,good for 10,11,12 and excellent for 13 and 14 .To compare amount of knowledge based on sex ,faculty and type of entrance we used Independent T test and for evaluation knowledge status we used Man-Whitney U test.

For evaluation the correlation between knowledge and mean value score we used Pearson Correlation Coefficient. We considered level of significance as p<0.05.

Results

By evaluating the amount of knowledge of dental interns of 14 common emergency questions, we found that the highest level of knowledge was about vaso depressor syncope (93.3%) and the lowest was about thyroidal disorders (10%). (Table 1)

Mean value and standard deviation for students' scores were 6.01±2.27 and minimum score was 3 and the maximum score was 13. To determining median of statistical distribution we found that 50% of students earned 6 point of 14. 66.67% of students' knowledge was weak, 25% intermediate, and 6.67% good and 1.67% was excellent. (Table 2)

Table 1 .frequency and frequency percentage of responsiveness to questions separately.

ques-tions	incorrect		correct		total	
	quantity	percent-age	quantity	percent-age	quantity	percent-age
Vasode-pressor syncope	4	6.7%	56	93.3%	60	100%
pregnancy	42	70.0%	18	30.0%	60	100%
Orthostatic hypoten-sion	13	21.7%	47	78.3%	60	100%
seizure	44	73.3%	16	26.7%	60	100%
Adrenal insuffi-ciency	47	78.3%	13	21.7%	60	100%
diabetes	16	26.7%	44	73.3%	60	100%
Thyroidal disorder	54	90.0%	6	10.0%	60	100%
allergy	53	88.3%	7	11.7%	60	100%
Angina pectoris	15	25.0%	45	75.0%	60	100%
Hyper ventilation	38	63.3%	22	36.7%	60	100%
asthma	37	61.7%	23	38.3%	60	100%
Anti-de-pressant drugs	52	86.7%	8	13.3%	60	100%
Cardiopul-monary resuscita-tion	41	68.3%	19	31.7%	60	100%
aspiration	37	61.7%	23	38.3%	60	100%

Table 2.total value of amount of knowledge about common emergencies

Mean value of amount of knowl-edge(0-14)	Standard deviation	Minimum score	Maximum score	median
6.01	2.27	3.00	13.00	6.00

By evaluating two quantitative variables of age and amount of knowledge we found no correlation based on Pearson Correlation coefficient (p=0.250, r=-0.151) but correlation between knowledge and mean value scores of students educational course was significant (p=0.002, r=0.396). (table3)

Table 3.correaltion of knowledge scores about dental emergencies

correlation			
		Knowledge scores	age
age	Pearson correlation coefficient	-0.151	
	P	0.250	
	N	60	
Mean value score	Pearson correlation coefficient	0.396	-0.218
	P	0.002	0.094
	N	60	60

Evaluating amount knowledge based on sex, faculty and entrance type, we found that amount of knowledge based on sex (p=0.122) and based on faculty (p=0.206) doesn't have significant difference but correlation of amount of knowledge and type of admission was significant. (P< 0.0001) so that amount of knowledge of students that admitted in university by konkur exam was higher than students that were admitted by abroad countries. (6.22 ±2.3 versus4.2 ±0.75)

Discussion

In our cross sectional descriptive used a questionnaire of 14 questions and 60 students of 70 students (85.71%) take apart in study, a good cooperation. Reasons for in cooperation of some students was lack of time, tiredness and unwilling to answering to questions.

In Amirchakhmagi and et al study, 85.6% of dental specialist's amount of knowledge was in level of intermediate and good. Reason for weakness of dental intern versus dental specialists can be attributed to lesser experience and knowledge of dental students. (1)

In babaei and et al study performed on Babol dentists, 63.9% of dentist's amounts of knowledge were intermediate to good. (6)-

In mollashahi and et al study that was done on zahedan's dentist 96.8 of them show intermediate to good scores, one of the reasons for this knowledge is higher experience of these dentists.(7)

In ghapanchi and et al study amount of

knowledge of dental interns was intermediate to good in near 100% of them. Reason of this great difference with guilan students is that topics of dental emergences teaches in terms 7 and 8 ,a far distance to last term.(8)

In present study highest amount of knowledge is for vasodepressor syncope and unfortunately lowest is for thyroidal disorders while thyroidal storm is a dangerous situation that can lead to death ,but in Amirchaghmagi and et al study highest scores was about diabetes emergences and lowest knowledge was about foreign body aspiration. This difference can be related to emphasis to different topics in different faculties. (1)

In present study 19 of 60interns (37%) had correct answer to CPR question like Rahimbagaei and et al study in which amount of knowledge was low about CPR. mean value of total score of CPR was 20.12 of 40 that can be related to absence of practical training and also lack of retraining theoretical topics.(4)

In our study high scores was attained for syncope management after local anesthesia injection (93.3%) like akbari and et al study (97.7%) that can be related to higher emphasis in faculties on this topic and can be related also to higher prevalence of this emergency in dental clinics and higher encounter to this situation.(9)

It is necessary to attention that most of dental students refuse to treat patient with systemic compromised conditions like pregnancy and diabetes mellitus that can affect their knowledge about management of patients with systemic disease as a future dentists.

In present study we didn't find any correlation between amount of knowledge and sex and age like the studies done by Chakhmagi and et al and Babaei and et al, showing same educational situation in different places. We found also a significant correlation between amount of knowledge and type of university admission and mean value score of educational course that can be related to student's different amount of effort and tendency to learning. (1, 6)

Study limitations:

1. Lower size of samples in comparison to other studies.

2. We designed just 14 questions because of preventing decrease of value of answering.

3. This study evaluates just theoretical literacy not practical ability.

4. This study evaluates just common emergencies not all emergencies.

5. Probability of not regarding to honesty by students.

Conclusion

It looks like that amount of knowledge of Guilan dental intern about dental emergencies is weak and it has relation with mean value score and type of university admission of students. Highest amount of knowledge is for vasodepressor syncope and lowest to thyroidal disorders. It is obvious that we need more emphasis on theoretical and practical topics of emergencies to improve their ability in controlling these emergencies.

Conflict of interest

The authors declare that there is no conflict of interest.

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