

KNOWLEDGE, ATTITUDE AND PRACTICES ABOUT MEDICAL EMERGENCIES AMONG DENTAL HOUSEOFFICERS WORKING IN TWO DENTAL COLLEGES

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ABSTRACT

Study was carried out to assess the knowledge, skills and perceptions regarding the management of medical emergencies amongst house officers of Private and Public Dental College of Karachi. A cross sectional study was done at private and public dental colleges from March 2018 to September 2018. A pretested closed ended questionnaire consisting of three sections was used in which knowledge of the house officers on management of medical emergency, evaluation of skills they can perform during occurrence of medical emergency and their perceptions regarding the betterment of emergency management was assessed. Collected data were analysed using SPSS version 16. Out of 150 house officers, 131(87.3%) responded to the questionnaire. The results showed 45% received Basic life support (BLS) training. Only 71.8% of the house officers encountered 1-5 medical emergencies during their dental life. Syncope was found to be most common (67.2%) among all. In assessment of practices of dental house officers, most of them can take pulse (96.2%), blood pressure (99.2%) and blood / sugar glucose level (90.8%), but few of them can perform abdominal thrust (35.1%), maintain Intravenous line (20.6%) and perform Cardio Pulmonary Resuscitation (44.3%). Only 16.03% of house officers think that their undergraduate training is enough to prepare them to manage medical emergencies. While 87.7 think that house officers should undergo medical emergency training prior to starting their house job. Within the limitation of the study, it was concluded that practical training about management of medical emergencies among house officers was inadequate. Dental education departments responsible for making courses should update quality of training for managing the medical emergencies.

Key Words: Medical emergencies, dental house officers, inadequate training.

INTRODUCTION

Medical emergency occurring in any dental practice can be life threatening or can impose serious permanent health damage to the patient. Before starting the treat-

ment dentist must know about medical emergencies and their management. ¹⁻³As with the advent of new techniques, life expectancy has increased. People with underlying medical conditions and elderly population are seeking more dental treatment. Emergencies in these situations can occur. ^{4,5} Japan Dental Society of Anaesthesiology conducted study which concluded that approximately 35% of patients who suffered medical emergency situations had some systemic disease and 33% of them were suffering from cardiovascular disease. ⁶ To overcome this problem thorough guidelines should be provided to concerned staff. ^{7,8} Most of the dental Colleges are focusing more theoretical training rather than providing hands-on skills. Many graduates find themselves unable to do practical Work. ⁹⁻¹¹ University curriculum should focus more on students' practical knowledge and skills. After house job training most of the dentists in Pakistan established their own clinic. Dental surgeons must have good knowledge and awareness of medical emergencies, and they should be prepared to manage such situations. ¹² The incidence of emergency and urgency episodes during outpatient department is impulsive and does not always follow set patterns, but few dentists are prepared to face these episodes, because of lack of appropriate knowledge. ^{13,14}

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Daniel A. Haas recommended six essential drugs which should be available in the dental clinics. They are; oxygen, epinephrine, nitro-glycerine, antihistamine, albuterol/salbutamol, aspirin.¹⁵ Gupta et al emphasized that training must be enhanced at undergraduate, graduate and continuing education level.¹⁶

The basic aim of this study was to assess the knowledge and practices of dental house officers dealing with medical emergencies in dental OPDs at Private and Public Dental Colleges. This study also helps in determining the prevalence of experience of medical emergencies by the house officers and whether they were prepared for such situations.

MATERIAL AND METHODS

A cross sectional study was done at Hamdard University Dental Hospital, Dr Ishrat ul Ebad Khan Institute of Oral Health Sciences and Dow Dental College from August 2018 to September 2018. A total of 150 sample size was included in which only 131 (87.3%) responded to the questionnaire. The respondent group included the House officers of Hamdard University Dental Hospital, Dr Ishrat ul Ebad Khan Institute of Oral Health Sciences and Dow Dental College. A written consent was received from each respondent before filling the questionnaire. The study was approved by the research ethics committee of Hamdard University and Dow University. Collected data were analysed using SPSS version 16. A validated questionnaire was taken from "Nikita Mirza"¹ study with some modification endorsed by experts from oral diagnosis and oral maxillofacial departments. A final questionnaire was piloted on 10 respondents (other than study sample). The reliability of questionnaire was also determined by Cronbach Alpha i.e. 0.7. Questionnaire consisted of three parts, section A, B and C. Chi-Square Independence Test was used to find association between knowledge of students and medical emergencies.

Section A consisted of questions regarding knowledge of the house officers on management of medical emergency, its causes, how have they gained it and how many emergencies they have encountered during their dental life. The respondents were given multiple choices for which they had to choose one.

Section B evaluated skills that they can perform during occurrence of medical emergency which includes taking blood pressure, pulse, maintaining IV line, performing abdominal thrust, performing CPR. The respondents had to answer these with simple yes or no.

Section C consisted of their perceptions regarding the betterment of emergency management. To calculate the significance of each statement in training for medical emergency, the mean score was used. Their opinion regarding how well trained they consider themselves to manage emergency in OPDs and how their skills can be enhanced. Data analysis was done on SPSS Version 16. Chi-Square Independence Test was used

to find association between knowledge of student and medical emergencies.

RESULTS

It was found that out of 150 house officers only 131 and were working in different OPDs filled the questionnaires with response rate of 87%. The female House officers were 85% and 15% were male dentists. While asking about Basic life support training only 45% replied with yes and 55% replied that they were not trained. It was found out that frequency of occurrence of medical emergencies was very low. 71.8% of the house officers encountered 1-5 emergencies during their tenure, 7.6% of them encountered 5-10 frequency, 4.6% replied with 10 and 16% answered that they haven't encountered any medical emergency. (Table 1)

Among different medical emergencies syncope was found to be the most common i.e. 67.2%. Hypoglycaemia was found the second most prevalent medical emergency in dental OPD i.e. 29.2%. (Table 2) Moreover, when asking about help during medical emergencies, most of them i.e. 87% replied yes and 13% said they don't need any help during management of medical emergency.

While in assessment of practices of dental house officers regarding taking blood pressure almost all said that they take blood pressure, 96.8% said they can take pulse. 89.4% said they can measure blood/sugar glucose level. Only 18.9% house officer answered affirmative that they can maintain IV line. Perhaps only 30.9% answered that they can perform abdominal thrust. (Table 3)

DISCUSSION

This study shows knowledge and practices of Dental house officers dealing with medical emergencies of private and Public Dental Colleges. As the response rate in present study was 87.3%, which is different from Nikita Mirza (10.5%) in South Africa.¹ This higher response rate i.e. 87% may be because of direct approaching towards respondents and not by e-mails. House officers in OPDs usually working under supervision of postgraduate trainees or senior faculty member so they depend entirely on them whenever emergency occur. In current study, about 45% of house officers received Basic Life Support program training. The results were similar with the studies done by G J Atherton and J A McCaul in Great Britain which was 57%.⁷ 70.2% of the house officers received emergency knowledge by attending lectures and 20.6% through workshops. Moreover, results were a bit higher than the studies done by O Ehigiator, AO Ehizele i.e. 72% received education through lectures and 41% through role playing and simulations.⁹ However, the incidence of medical emergency encountered by house officers were much low. Majority of the house officers encountered frequency of 1 to 5 medical emergencies. While only 7.6% said they encountered more than 10 medical emergencies. On the other hand results were found in contrast with the study conducted by Arsati in Brazil i.e. 66.8%.¹⁷ Less number of incidence might be because of detailed history taking and essential precautions taken by the house officers before starting any dental

TABLE 1: BASIC LIFE SUPPORT TRAINING DURING DENTAL PROFESSION AND FREQUENCY OF OCCURRENCE OF MEDICAL EMERGENCIES IN OUTPATIENT DEPARTMENT

Response	BLS training during dental profession		Frequency of occurrence of medical emergencies		
	Frequency	Percentage	Range	Frequency	Percent
Yes	59	45	1-5	94	71.8
No	72	55	6-10	10	7.6
Total	131	100.0	More than 10	6	4.6
			None	21	16.0
			Total	131	100.0

TABLE 2: MOST PREVALENT MEDICAL EMERGENCIES SEEN IN OUTPATIENT DEPARTMENT OF HAMDARD UNIVERSITY DENTAL HOSPITAL, DR ISHRAT UL EBAD KHAN INSTITUTE OF ORAL HEALTH SCIENCES AND DOW DENTAL COLLEGE

Medical emergencies seen in outpatient department		
Medical Emergency	Frequency	Percentage
Syncope	88	67.2
Hypoglycaemia	38	29.0
Foreign body aspiration	2	1.5
Asthma	3	2.3
Total	131	100.0

procedure. As in a study done by Praveen s jodalli among dental graduates of Belgium city, where syncope/faint was encountered to be most common medical emergency 40.9%, followed by hypoglycaemic attack (37.1%).¹⁸ The results of this study confirm also that the most common critical clinical situation found was syncope a (67.2%) , followed by hypoglycaemia (29%). In assessment of performing procedures, majority of house officers could measure blood pressure, check pulse and measure blood/glucose level. 20.6%of the house officers said they can maintain IV line in case of any emergency as compared to dental practitioner in South Africa where they found 47% can maintain IV line. Keeping in mind the Basic Life Support course does not include maintaining IV line, as only 38.2% answered they can carry out bag/mask ventilation while 70% South African dentists felt themselves competitive in performing bag mask ventilation.¹ Cardiopulmonary arrest during dental treatment was rarely reported.²²⁻²⁵ About 44.7% answered yes that they can perform CPR, results were similar to study done by Gupta T. done in Udipi and Mangalore, India where 39.3% dentists

TABLE 3: EVALUATION OF SKILLS OF HOUSE OFFICERS WORKING IN OUTPATIENT DEPARTMENT OF HAMDARD UNIVERSITY DENTAL HOSPITAL, DR ISHRAT UL EBAD KHAN INSTITUTE OF ORAL HEALTH SCIENCES AND DOW DENTAL COLLEGE

Evaluation Of Skills Of House Officers					
Practices Of House Officers	Yes %	No%	df	CI	P value
Taking patient blood pressure	99.2	0.8	1	1.00-0.847	0.670
Taking patient pulse	96.2	3.8	1	1.00-0.431	0.333
Measuring blood/sugar glucose	90.8	9.2	1	0.691-0.423	0.484
Maintaining IV line	20.6	79.4	1	0.001-0.001	0.000
Performing abdominal thrust	35.1	64.9	1	1.00-0.602	0.991
Carrying out ventilation through bag or mask	38.2	61	1	0.132-0.077	0.092
Performing CPR	44.3	55.7	1	1.00-0.566	0.934

could perform mouth to mouth breathing and 35.2 could perform cardiac compression.¹⁶ Another study done by Stafuzza in Brazil where 67% affirmed that they can perform CPR.¹⁴ Only 16.03% agree their undergraduate training is enough to prepare medical emergencies. In a study conducted in NewZealand more than half of the respondents were dissatisfied with their training received as undergraduate students.²⁶ According to

present survey it was found that house officers strongly felt that there was a need for practical training of emergency situations. As just by theoretically reading in their curriculum they felt themselves incapable of handling emergency situations.^{27, 28} 87% dentists in South Africa also felt the need for more practical training for emergency handlings. About 78 % of the South African dentists felt that dentists should participate

in medical emergency courses once in a year similarly about 89.3% house officers felt they should take part in the medical emergency dealing courses.¹

CONCLUSION

It was concluded that practical training for the management of medical emergencies has been inadequate among house officers.

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Substantial contributions to the design of the work and the acquisition of data for the work. Drafting the work and revising it critically. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Analysis of data work. Integrity of any part of the work appropriately investigated.

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