

Attitude and Awareness among UG, Intern & PG students about Management of Medical Emergencies in Dental Office: A Survey Study

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Abstract:

Background: Medical emergencies can occur during dental practice which can even be life-threatening to a patient. Knowledge, awareness and training regarding medical emergencies are critical to the practice of dentistry.

Aim: To assess the attitude and awareness among undergraduate (UG), intern & postgraduate (PG) dental students about management of medical emergencies in dental office.

Materials & Methods: A questionnaire based survey was conducted to assess the attitude and awareness among UG, intern & PG dental students about management of medical emergencies in dental office. The questionnaire for the study consisted of eight closed- ended questions. Responses were recorded and descriptive analysis was used for statistical analysis of the data.

Results: 80.30% of UG students, 88.68% interns and 95.24% of PG dental students enquire about the medical history of their patients. Only 43.94% of UG students, 56.60% interns and 66.67% of PG students claimed that they had attended any workshop on emergency training or management programs. 65.15% of UGs, 58.49% of interns and 45.24% of PGs, were not confident to handle any emergency condition at their dental clinic.

Conclusion: UG, intern and PG dental students do not feel confident in handling medical emergencies.

Keywords: Medical Emergencies, Attitude, Awareness, Dental Students, Survey, Questionnaire.

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I. Introduction:

The occurrence of medical emergencies is fortunately rare in a dental office.¹ Medical emergencies are indeed alarming conditions but they can be made less alarming with prior preparation and prompt action. An existing medical condition can exacerbate and result in a medical emergency. Additionally, allergies and adverse drug reactions can also engender emergency conditions. A thorough patient history and monitoring of vital signs can guide the clinician regarding a potential medical emergency that may arise, and to take steps beforehand to prevent it from ever occurring. Anxiety regarding dental procedures is a common occurrence in patients and can lead to syncope and dental procedural accidents sometimes do carry the risk of obstructing the airway of a patient. Though, good methods of practice can help minimize such incidents², it is imperative that dentists possess the required knowledge and training to manage such conditions. An emergency kit equipped with necessary emergency drugs is a key desideratum for medical emergencies.

Since dental students are the future of dentistry, this study was planned to assess and compare the attitude and awareness among UG, intern & PG students about management of medical emergencies in dental office.

II. Materials & Methods:

This questionnaire based cross-sectional survey was conducted from 15-05-2020 to 15-06-2020. The questionnaire for the study was constructed from a pretested questionnaire by Varma et al. (2016).³ The questionnaire consisted of eight closed-ended questions designed to assess the attitude and awareness of UG, intern and PG dental students regarding management of medical emergencies in the dental office. The questionnaire was sent to 210 dental students (70 from each group). Attempting all questions was mandatory to submit the questionnaire. 161 dental students filled in the questionnaire, i.e. the response rate for the study was 76.67%. Responses were recorded and descriptive analysis was used for statistical analysis of the data.

Results: **Table 1** shows the distribution of the study sample according to their academic level. 40.99% of the respondents were undergraduate (UG) dental students, 32.92% were interns and 26.09% of the respondents comprised of dental postgraduate (PG) students.

Table 2 shows the category wise responses of the study sample to the questionnaire. 80.30% of UG students, 88.68% interns and 95.24% of PG dental students replied that they enquire about the medical history of their patients. 72.72%, 86.79% and 90.48% of UG, intern and PG dental students recorded the vital signs of patients before commencement of dental treatment. Only 43.94% of UG students, 56.60% interns and 66.67% of PG students claimed that they had attended any workshop on emergency training or management programs. 65.15% of UGs, 58.49% of interns and 45.24% of PGs, were not confident to handle any emergency condition at their dental clinic. 72.72%, 84.91% and 92.86% of UGs, interns and PGs respectively, knew the correct position of patient placement during syncope. 72.73% of UG students, 83.02% of interns and 85.71% of PG students were aware of the procedure to handle foreign body aspiration in the dental office. Only 9.09% of UG students, 22.64% of interns and 33.33%

knew that Emergency Management Services (EMS) should be immediately activated in case the patient does not respond to shaking or shouting.

Table 1: Distribution of the study sample according to their academic level

Academic level	Undergraduate (UG)	Intern	Postgraduate (PG)	Total
No. of participants	66	53	42	161
Percentage distribution	40.99%	32.92%	26.09%	100%

Table 2: Responses of UG, Intern and PG students to each question

S.No.	Question	Response	No. as per academic level			% as per academic level		
			UG	Intern	PG	UG	Intern	PG
1	Do you enquire about medical history of patients?	Yes	53	47	40	80.30%	88.68%	95.24%
		No	13	6	2	19.70%	11.32%	4.76%
2	Do you obtain the vital signs (blood pressure, pulse, respiration, and temperature) of the patients before commencing any treatment?	Yes	48	46	38	72.72%	86.79%	90.48%
		No	18	7	4	27.27%	13.21%	9.52%
3	Have you attended any workshop on emergency training or management programs?	Yes	29	30	28	43.94%	56.60%	66.67%
		No	37	23	14	56.06%	43.40%	33.33%

4	Do you think you can handle any emergency condition at your dental clinic?	Yes	23	22	23	34.85%	41.51%	54.76%
		No	43	31	19	65.15%	58.49%	45.24%
5	Is there availability of emergency kits at your dental clinic?	Yes	50	43	37	75.76%	81.13%	88.10%
		No	16	10	5	24.24%	18.87%	11.90%
6	A patient suffered from syncope when you commenced a dental procedure. What would be your immediate action?	Continue dental procedure	1	0	0	1.51%	0%	0%
		Place patient in Trendelenburg position and give ammonia inhalant	48	45	39	72.72%	84.91%	92.86%
		Make patient to sit in upright position	12	5	2	18.18%	9.43%	4.76%
		Make patient to stand	5	3	1	7.58%	5.66%	2.38%
7	A patient is cited with airway obstruction during dental treatment due to aspiration of foreign body what would you do?	Attempt Heimlich/Triple maneuver	4	2	1	6.06%	3.77%	2.38%
		Examine mouth and local area	8	5	3	12.12%	9.43%	7.14%
		Ask patient to cough	6	2	2	9.09%	3.77%	4.76%
		All of the above	48	44	36	72.73%	83.02%	85.71%
8	If you confirm	Start CPR	40	29	19	60.60%	54.72%	45.24%

somebody is not responding to you even after shaking and shouting at him. What will be your immediate action?	Activate EMS	6	12	14	9.09%	22.64%	33.33%
	Put him in recovery position	17	10	9	25.76%	18.87%	21.43%
	Observe	3	2	0	4.55%	3.77%	0%
Total							

Here, CPR = Cardiopulmonary resuscitation, EMS= Emergency medical service

III. Discussion:

Medical history of the patient is a pivotal part of dental history. It gives information regarding the patient's preexisting medical conditions and allergies⁴, which can prevent the occurrence of medical emergencies. Most of our study participants realized the importance of medical history taking in dentistry. 80.30% of UG students, 88.68% interns and 95.24% of PG dental students replied that they enquire about the medical history of their patients. Our results are in agreement with previous studies.^{3,5,6,7}

To avoid complications during treatment it is an obligation that the dentist closely monitors his/her patients, especially those who have an underlying medical condition or are medically compromised. It aids the dentist to detect and be fully prepared to handle any acute medical emergency that may arise and require immediate response.⁸ Most of our study participants, i.e. 72.72%, 86.79% and 90.48% of UG, intern and PG dental students answered that they recorded the vital signs of patients before commencement of dental treatment. Our results are in accordance with that of that of Varma et al³, who reported that 83.06% of dental practitioners recorded vital signs. Elanchezhiyan et al. also reported in their study that 95% of dentists agree that it is important for dentists to obtain vital signs before treatment.⁶

Only 43.94% of UG students, 56.60% interns and 66.67% of PG students claimed that they had attended any workshop on emergency training or management programs. Our values are slightly higher than of Gupta et al. (2008)⁹ who reported that only 42.1% of dentists in their study had undergone training in medical emergencies during their UG and PG education. To our consternation, majority of the study participants, i.e. 65.15% of UGs, 58.49% of interns and 45.24% of PGs, were not confident to handle any emergency condition at their dental clinic. Our results are in agreement with that of other studies.^{3,5,7,10} 75.76%, 81.135 and 88.10% of UG, intern and PG students reported that emergency medical kits were available to them at their clinics. Our results are similar to that reported by Varma et al.³, Albelaihi et al.⁵ and Ahamed et al.⁷ Our study results reflect that though dental emergency kits are available at the clinics in dental colleges, students at all levels of dental school are not adequately trained to manage medical emergencies.

According to the American Heart Association, syncope may be defined as “a temporary loss of consciousness usually related to insufficient blood flow to the brain. It's also called fainting or ‘passing out’”.¹¹ Majority of our study participants, i.e. 72.72%, 84.91% and 92.86% of UGs, interns and PGs respectively, knew the correct position of patient placement during syncope and were aware of the utility of ammonia inhalation during such an emergency. It may be due to the fact that syncope is the commonest medical emergency encountered at the dental clinic.^{5,6,12} Our results are in agreement with that of other authors.^{3,5,13}

Accidental ingestion or aspiration of foreign body is a common challenge encountered during dental practice. It can even become a life-threatening condition. Early recognition and localization of the foreign body is the key to prevent devastating outcomes. To manage such emergencies, the patient's head is kept low, turned to the side and the oral cavity is examined. If the foreign body or instrument cannot be located, the patient is asked to cough so that the airway is cleared repeated back blows are administered for dislodgement of the object and Heimlich maneuver is attempted. If the object cannot be retrieved still, the patient should be referred to a medical emergency unit.^{14,15} 72.73% of UG students, 83.02% of interns and 85.71% of PG students were aware of the procedure to handle foreign body aspiration in the dental office. Our results are in consensus with that of Varma et al.³

Emergency Management Services (EMS) should be immediately activated in case the patient does not respond to shaking or shouting. Surprisingly, only 9.09% of UG students, 22.64% of interns and 33.33% gave the correct answer. Our results are in accordance with that of previous studies.^{3,16} This indicates lack of knowledge and training regarding Basic Life Support (BLS) among dental students.

IV. Conclusion:

Although dental students have knowledge of common medical emergencies that may arise in a dental clinic, they do not feel confident enough to handle such emergencies. This is probably due to lack of guidance and training regarding medical emergencies and Basic Life Support. Reportedly, majority of dental students haven't attended any workshop on emergency training or management programs.

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