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Knowledge, Attitude, and Perceived Confidence in the Management of Medical Emergencies in Dental Clinics: A Survey among Dental Professionals

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ABSTRACT

Aims and objectives: Life-threatening emergencies can occur at anytime, anywhere, and in anyone. Effective management of an emergency in the dental office is ultimately the dentist's responsibility. Lack of training and inability to overcome medical emergencies can lead to serious consequences and legal actions. The study aims to investigate and assess the knowledge, attitude, and perceived confidence of dental professionals in the management of medical emergencies

Materials and methods: A Self -administered questionnaire was distributed to 115 random dental professionals of various years of working experience. The questionnaire consisted of sixteen questions to assess the knowledge and awareness regarding syncope, CPR, measuring vital signs, etc.

Results: 115 responses were obtained in the study. Eightythree percent and 48% of the participants inquired about the medical history and vital signs before dental treatment, respectively. Only 37% of participants were confident to handle a medical emergency in the dental office. 49% knew the correct location of chest compression and 29% were familiar with the right compression ventilation ratio.

Conclusion: Participants were lacking confidence in handling medical emergencies even though the majority of the medical history of the patient. Most of the dentists are not attached to a hospital or a medical institution making them less confident in taking up medically compromised cases. Most of the participants are not trained in basic life support. Annual basic support and emergency courses should be mandatory in the dental teaching curriculum.

Key words: Cardiopulmonary resuscitation, Angina, Chocking

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INTRODUCTION

Many situations in the dental office can provoke medical emergencies. The Knowledge attitude and perseverance show how confident we are while managing a medically compromised patient. The frequent administration of local anaesthetic and, dental care of medically compromised patients and the fear of surgical operation are frequent causes of emergency such as syncope, hyperventilation, and cardiac arrest. More number of dentists did not follow the stress reduction protocol. It is imperative to follow stress reduction protocol as it is reported that ¾ of the medical emergencies develop because dentists fail to recognize patient anxiety. Scheduling the appointment in the morning and keeping a shorter duration is one such method. A thorough medical history plays a vital role in minimizing medical emergencies in the dental office. It provides the dentist an insight into the health of the patient and formulating a comprehensive treatment plan with suitable alternatives in the treatment plan. Emergencies might still occur even after taking all these precautions. Most of the unwanted events occur due to lack of training and inability to manage emergencies. Therefore, dental students must have appropriate training and management of such conditions so that they are confident in managing emergency in their practice.

MATERIAL AND METHODS

A survey was conducted among dental professionals who were selected randomly. 67% Of them had completed BDS and 33% of the MDS. The study was conducted in the year 2018 during the month of October and November. A self-administered questionnaire was distributed among dental professionals with various years of working experience. The questionnaire consisted of 16 questions including general information about the dentist. The questions were aimed to find out the knowledge, attitude, and perceived confidence in handling medical emergencies in the dental clinic. Their knowledge and awareness regarding the management of syncope and their confidence in administering CPR, measuring vital signs, handling a

situation of aspiration of foreign body. A total of 115 questionnaires were filled. Dental professionals of any years of experience were included. The data was analysed, and the conclusion was made.

RESULTS

115 responses were obtained in the survey in which 67% of them were BDS and 33 % MDS. 76.5% of the respondents were of 0-2 years of experience in working or running a clinic.12.2% of experience of 3-5 years and 7% of 5-10 years of experience and 5% of them with more than 10 years of experience. The medical history of the patient was recorded for all the patients by 83.5% of the respondents and 16.5% of them did not record medical history in their practice. Most of the clinics were not attached to a hospital 64%.57% of them gets a medically compromised patient often and 26 % got such cases rarely. only 16.5% got frequent cases of medically compromised patients. The availability of emergency drugs in the clinic had to be assessed. Out of 115 professionals, 107(90%) of them had adrenaline In the clinic in case of emergency.56(48%) of them had hydrocortisone, 37(32%) had Diphenhydramine and 34(29%) had Atropine in case of emergency.

The knowledge on handling an emergency was assessed then. In response to what is the first action in dealing with an unresponsive patient 64% of them had the opinion of making the patient in recovery position. 13% went with start CPR and another 13% with activating EMS.9.6%had the opinion of observing the patient. The recovery portion of a patient in syncope according to 82% of the responders was Trendelenburg (Figure 1).

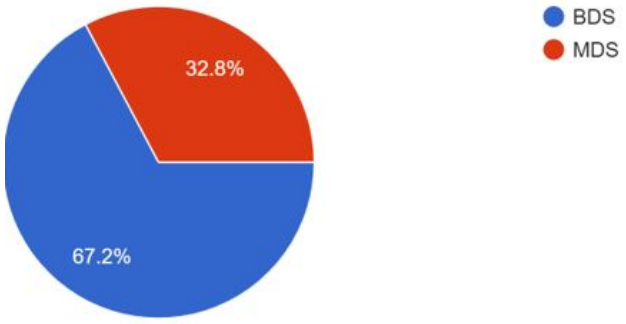

Figure 1: Qualification (116 response).

In repose to correct compression ventilation ratio for adults and pediatric patient performed by a single rescuer 34 of them responded 15:1,34 responded 30:2,30 responded 30:2 and 17 responded 30:1. The location for chest compression according to 57 of them in xiphisternum 37 mid-chest, 17 responded left side of chest and 4 right sides of the chest. The drug of choice and route of administration in case of anaphylaxis according to 44.3% was Adrenaline1:1000 IV,40.9% was adrenaline1:1000 IM,8.7% went with adrenaline 1:80000.Management of seizure in the dental chair is buy injecting IV diazepam according to 45.2%, wait and observe according to 29% and 25.2% of them of the opinion make the patient lie in supine position with feet elevated .49.6% of the responders have the habit of measuring the vital sings only when needed.48.7 of them always checks for all patients and 2 of them never measures the vital signs. The management of inadvertent aspiration of foreign object by the patient according to 42 was asked to patient to cough, 38 responded attempt Heimlich manoeuvre 29 went with examining the oral cavity and 6 of them went with keeping the patient in reverse Trendelenburg position. 68 out of the 115 are not trained in any basic life support training. In managing a medically compromised 91% are of the opinion of consulting a physician before treatment plan,5.2% prefer to treat the patient of their own, and rest prefer to refer to higher centres (Figure 2).

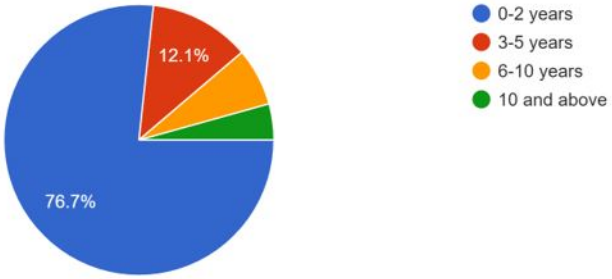

Figure 2: Years of experience of working in a clinic or running a clinic (116 responses).

DISCUSSION

The occurrence of a medical emergency in dental clinics is not very frequent, but various factors can increase the chances of such [1] incidences such as increasing number of older patients seeking dental care [2], the increasing use [3] and administration of drugs in dentistry, therapeutic advances in medical and pharmaceutical profession [3,4]. A study was done in Britain over 10 years and found that an emergency event was reported, on average, for every 4.5 practice years in England and Wales and 3.6 years in Scotland [5]. The study showed that there were 1.9 cases of syncope reported per dentist per year. All attempts are made to prevent the occurrence of medical emergencies, and this prevention begins with asking the patient's medical history. As per the protocol, all dentists must record the medical history as it will help them to recognize the possible complications and modify the treatment when required [6,7]. Measuring vital signs provides a baseline measurement from which abnormalities in the patient's condition can be determined. This is not frequently practiced in all dental offices. Vital signs, blood pressure, pulse, respiratory rate, and temperature must be measured before treatment [8]. In our study, 29.4% of the participants mentioned that measuring vital signs before commencing any treatment, and 20.3% of them did not. Moreover, most of them (50.3%) believed that vital signs are important when the patient's condition requires such as hypertension, diabetes, asthma, and heart diseases in general. In addition, some of them reported that the need to obtain

the vital signs depends on the procedure to be done such as scaling, extraction, and oral surgeries. Knowledge about the availability of emergency drugs is important. It seems mandatory to prepare an emergency drug kit consisting of drugs, which are essential. The guidelines differ in recommended drugs [9]. We found that respondents in our study had the availability of adrenaline followed by antihistamine (88.1% and 81.7%, respectively). The knowledge was not at an acceptable level, with drugs such as hydrocortisone and atropine (46.8% and 3.5%, respectively). Every dental practitioner must be able to diagnose and treat common emergencies such as syncope. The basic principles of emergencies and a consideration of the management must be included in the dental education [10]. In our study. Many reports describe the accidental aspiration of dental instruments, restorations, and prostheses during dental treatment [11]. Thirty-six percent of the participants were aware of the management of airway obstruction due to aspiration by examining the mouth and local area to locate and remove any object that might cause acute upper airway obstruction. Optimizing EMS dispatch is one of the most costeffective solutions to improving outcomes from cardiac arrest, recommended by both Saudi and American heart associations. Only 32% of the participants chose to activate EMS as their immediate action. Saudi heart association's recommendation on chest compression in CPR is to place the hand on the lower half of the sternum and place the heels of the hand 2–3 fingers above the xiphisternal angel and placing the hands below an imaginary line between the two nipples [11,12]. Seventy percent of the participants have chosen mid-chest as the right location for chest compression. The compression ventilation ratio is the number of compressions per rescue breath and vice versa. As recommended by American Heart Association, the single rescuer should begin CPR with 30 chest compressions followed by two breaths [13,14]. Postoperative bleeding is a complication in oral surgery and occur during a simple tooth extraction or during any other surgical procedure. The primary management of bleeding is compression, which is aimed at causing vasoconstriction and decreasing the permeability of the capillaries, this is achieved by placing gauze over the bleeding site with pressure. Placing pressure by biting on gauze for 10–30 min over the post extraction wound or other superficial bleeding areas is usually sufficient. Anaphylaxis is a medical emergency which requires immediate medical attention including administration of epinephrine. When symptoms of anaphylaxis do not resolve with an initial dose of epinephrine, and EMS arrival will exceed 5–10 min, a second dose of epinephrine may be given [15]. Forty percent of the participants chose antihistamine as the first drug in case of anaphylaxis, while only 32.7% chose adrenaline as the first drug of choice. Epilepsy involves seizures, which are characterized by an alteration of perception, behaviour, and mental activities, as well as by involuntary muscle contractions, temporary loss of consciousness, and chronic changes in neurological functions which result from abnormal electrical activity in the brain [12]. If a seizure occurs while a patient is undergoing treatment in the dental chair, a dentist should be able to manage the situation by knowing the primary steps including discontinuing the procedure immediately and placing the patient on side to decrease the chance of aspiration of secretions or dental materials [16].

The knowledge about the primary management in case of epileptic fits in the dental chair was good. In the management of angina during dental procedures, the result of the study shows that 57.5% of the dental students know the primary drug of choice for angina. Angina are reported very less during dental treatment but there is always a possibility [16,17]. So, it is important for

the dental practitioners to have sufficient knowledge on handling such situations. Choking is when a foreign object becomes lodged in the throat or windpipe, blocking the flow of air. Choking relieve depends on the consciousness of the patient, to relieve choking in responsive adult or child and perform Heimlich manoeuvre. 35.3% and 52.9% of the participants chose the correct management to relieve choking in responsive and unresponsive adult or child, respectively in the study. In the Canada and united states, studies have also shown that syncope is the most common medical emergency seen by dentists [17]. Syncope is seen approximately in 50% of all emergencies reported in one particular study, with the next most common event, mild allergy, represented only 8% of all emergencies [18].

CONCLUSION

From the results of the survey showed that most of the participants were lacking confidence in handling medical emergencies even though most of them took the medical history of the patient including medications and allergy before dental treatment. Although syncope was the most reported medical emergency, a very few of the participants had the knowledge regarding the management. The study showed that there is lack of depth in knowledge among the dental professionals in dealing medical emergencies. Basic life support and emergency courses should be made mandatory in dental teaching curriculum and handson training is required to increase their knowledge and confidence to enhance their ability to recognize and manage an emergency and to become wellqualified professionals.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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