

# Knowledge and Awareness in Chair Side Management of Medical Emergencies Among Dental Students

This Study is made in the Department of Oral and Maxillofacial Surgery at Thai Moogambigai Dental College and Hospital

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**Abstract:-There are several medical emergencies in the field of dentistry which occurs more often. Clinician should have sufficient knowledge and experience to handle the situation. To manage the emergency situation, first aid kits should be available in all the clinics. The aim of this study is to assess the knowledge and awareness in chair side management of medical emergencies among dental students (2).**

## I. INTRODUCTION

Medical emergencies require management by personnel who should ideally be suitably qualified to do so, the dentist should be able to initiate the primary management to avoid morbidity and mortality and this warrants the need for basic knowledge to manage the emergency situations in one's practice. The lack of training and inability to cope with medical emergencies can lead to tragic consequences and sometimes legal complications (5). A thorough medical history is essential to avoid emergencies during treatment. The preparatory steps should involve the following emergency drug kit, emergency equipment readily available and be alert to recognize emergencies early (10). The aim of this study is to provide a vision of medical emergencies that can happen and the

management of such emergencies. Medical emergencies in dental practice are generally perceived as being rare but when an emergency does occur it can be life threatening. (2)

## II. MATERIALS AND METHOD

A cross sectional study was conducted among the interns and final year of Thai Moogambigai Dental college .200 participants were enrolled in this study. Informed written consent was obtained from every participant prior to the study. Ethical committee approval was obtained from the university. Initially, the questionnaire was distributed to a group of 10 students as a pilot study to validate the questionnaire. Some modifications have been done for the feasibility. All students in this study completed a paper-based questionnaire consists of 20 closed ended questions. First part of the questionnaire consists of demographic details of the subject and their academic year. The information obtained during the data collection was strictly kept confidential. The questions in the questionnaire were designed to assess their knowledge and awareness about management of medical emergencies among dental students. Data collected, statistical analysis done and results obtained.

## III. RESULTS

1. Do you think you can handle any emergency condition in your dental office very confidently?

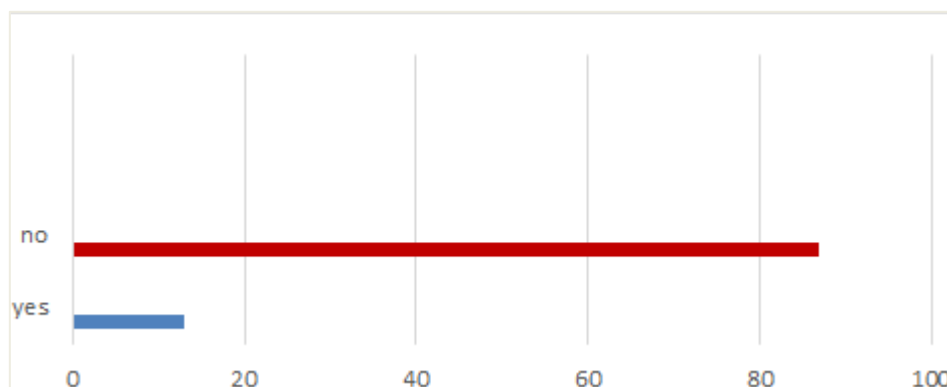


Fig 1

### ➤ Section-1

Only 13% of participants were confident in handling any emergency condition in dental office (1).

2. Which of the following emergency situations have you faced in your dental chair?

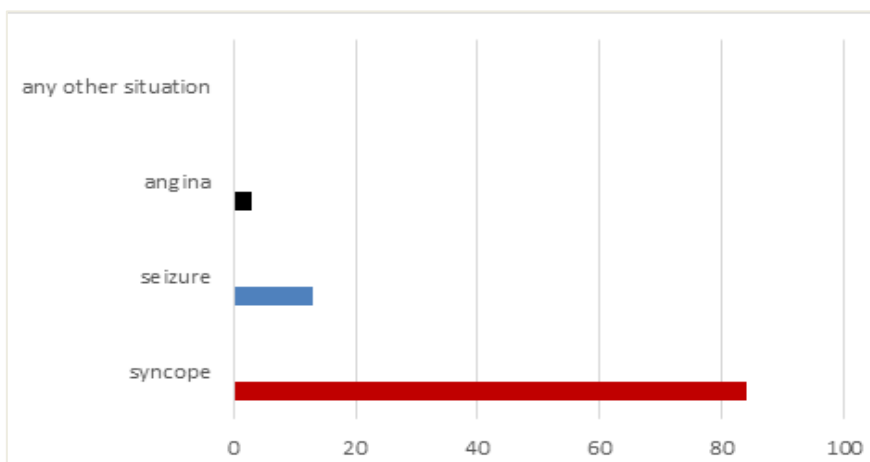


Fig 2

➤ Section-2

Almost 84% have faced syncope, 13% have faced seizure and the rest 3% angina (1)

3. If and when any complication occurs, it is always recommended to explain the situation to patient attender?

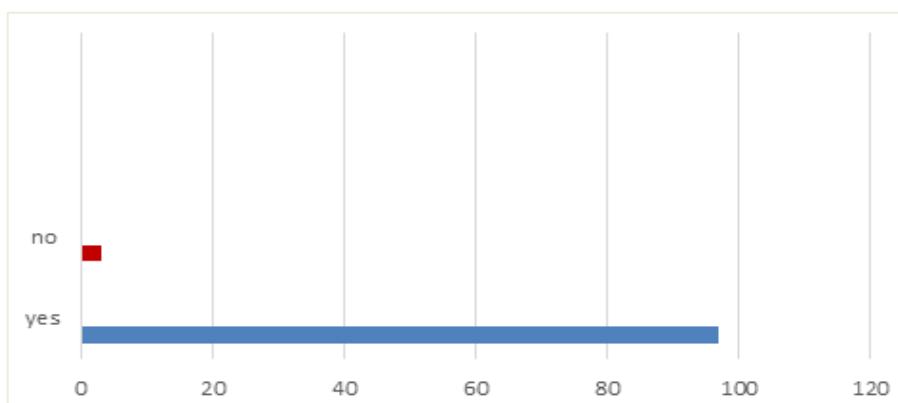


Fig 3

➤ Section-3

If and when any complication occurs, it is always recommended to explain the situation to patient attender, 97% of participants agreed to it (5).

4. Have you been trained to do?

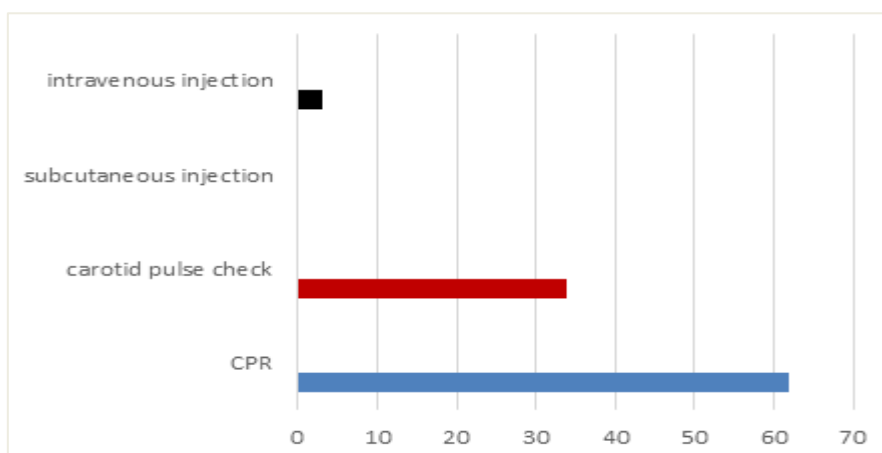


Fig 4

➤ Section-4

62% answered they had received training to CPR, 34% for carotid pulse check and 3% for intravenous injection (5).

5. Do you know pre and post- operative measures to be taken in hemophilic patient?

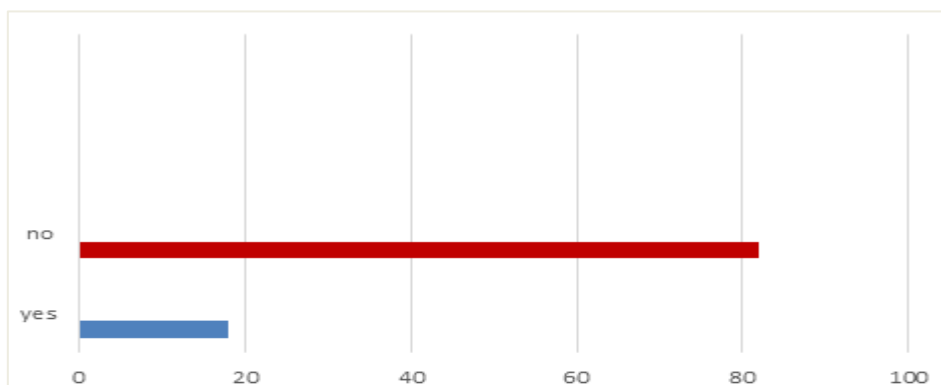


Fig 5

➤ Section-5

Only 18% were aware of the pre and post-operative measures to be taken in hemophilic patient (8).

6. What will be your primary management in case of epileptic attack in the dental chair?

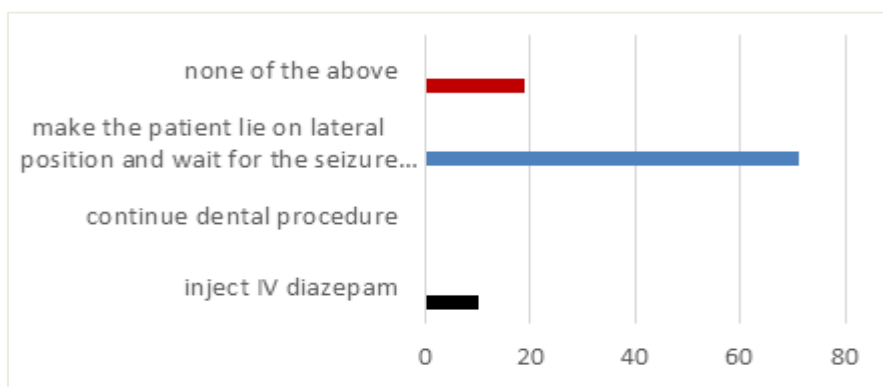


Fig 6

➤ Section-6

Primary management in case of epileptic attack in the dental procedure is to make the patient lie on lateral position and wait for the seizure to end, 71% responded correctly (6).

7. Do you have the knowledge about emergency drugs and their routes of administration?

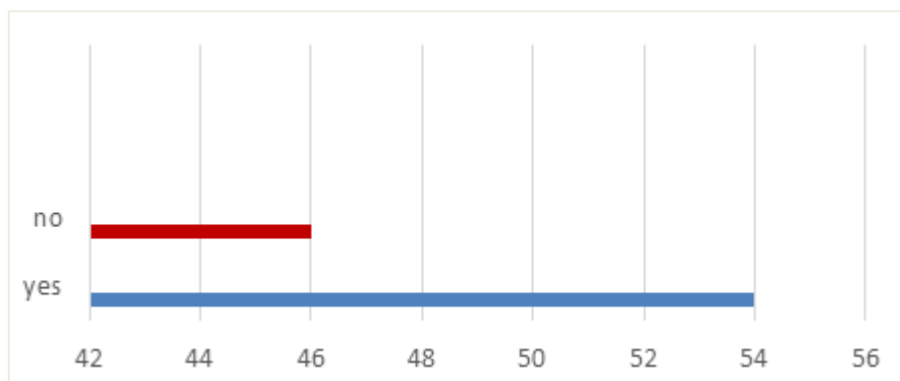


Fig 7

➤ Section-7

54% of participants were aware about the knowledge of emergency drugs and their routes of administration (5).

8. Are you aware of the common drugs used in dentistry that can precipitate an allergic reaction?

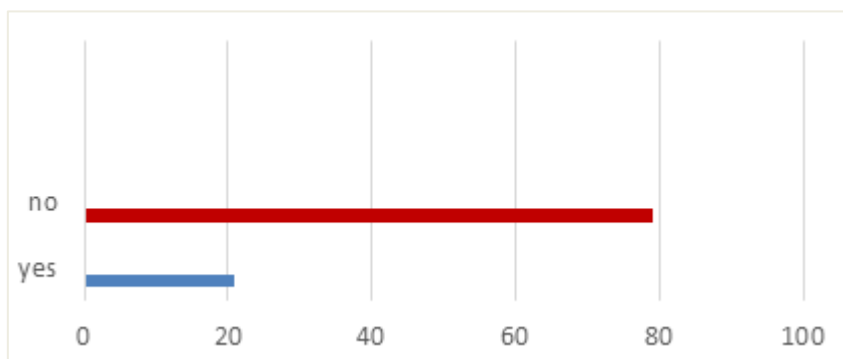


Fig 8

➤ Section-8

Almost 79% of participants were unaware of the common drugs used in dentistry that can precipitate an allergic reaction (2).

9. What is the drug of choice in anaphylaxis?

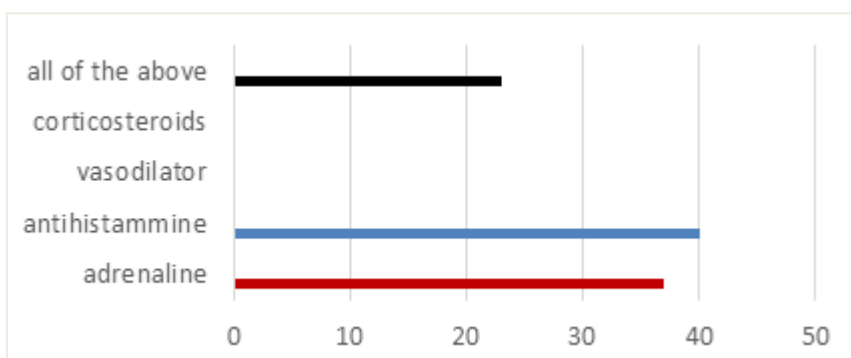


Fig 9

➤ Section-9

Adrenaline, antihistamine, vasodilator and corticosteroids are the drug of choice in anaphylaxis. Only 23% responded correctly (6).

10. Which of the following conditions can favor dry socket after extractions?

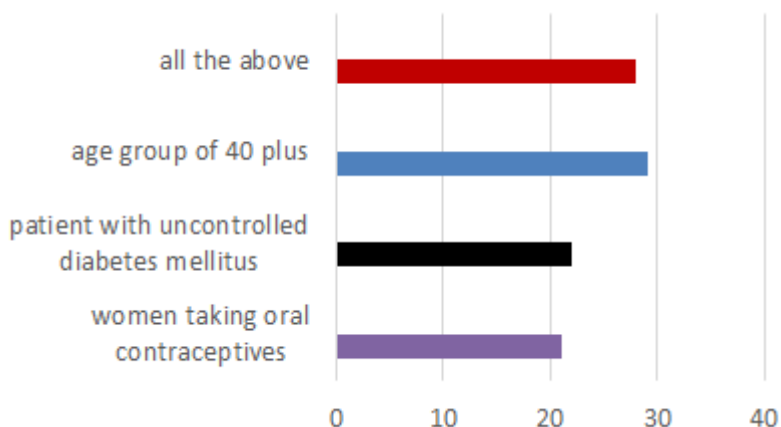


Fig 10

➤ Section-10

The conditions which can favor dry socket after extractions are women taking oral contraceptives, patient with uncontrolled diabetes mellitus and age group of 40 plus. 28% of participant responded correctly (3).

11. Vasoconstrictors increase the risk of developing a dry socket

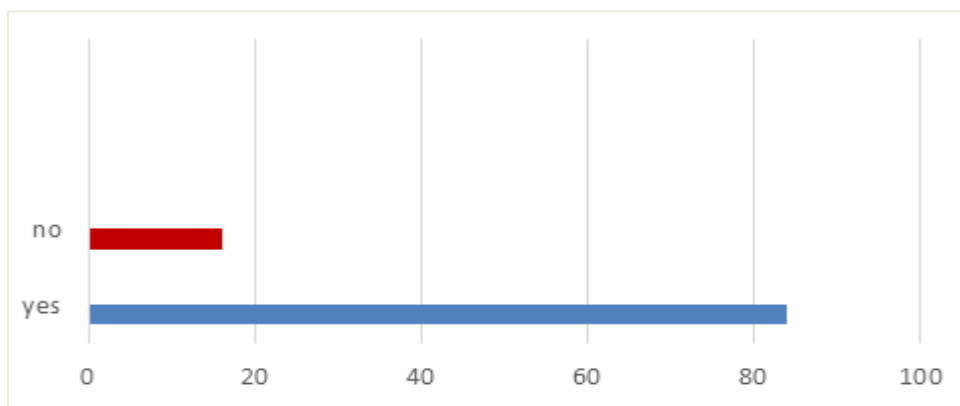


Fig 11

➤ Section-11

. Vasoconstrictors increases the risk of developing a dry socket, 84% of participants agreed with this correct information (4).

12. If an adjacent tooth is mistakenly subluxated during extraction, how would you manage this case?

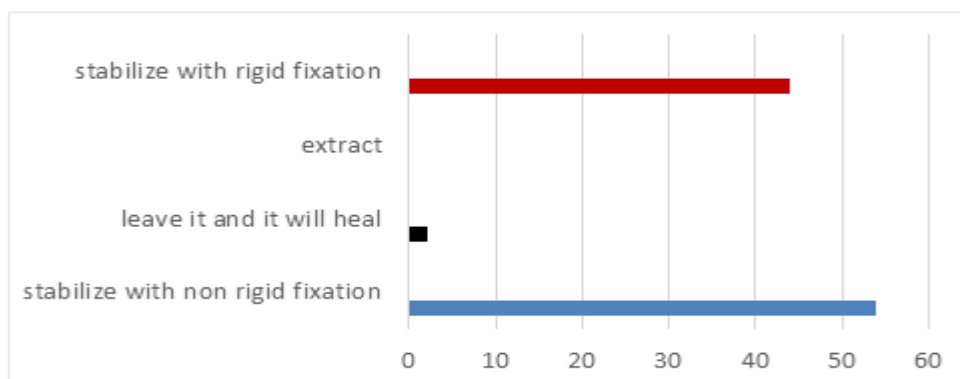


Fig 12

➤ Section-12

If an adjacent tooth is mistakenly subluxated during extraction, it is recommended to stabilize with non rigid fixation. 54% answered correctly (7).

13. How urgent do you think it is important to re-plant an avulsed tooth?

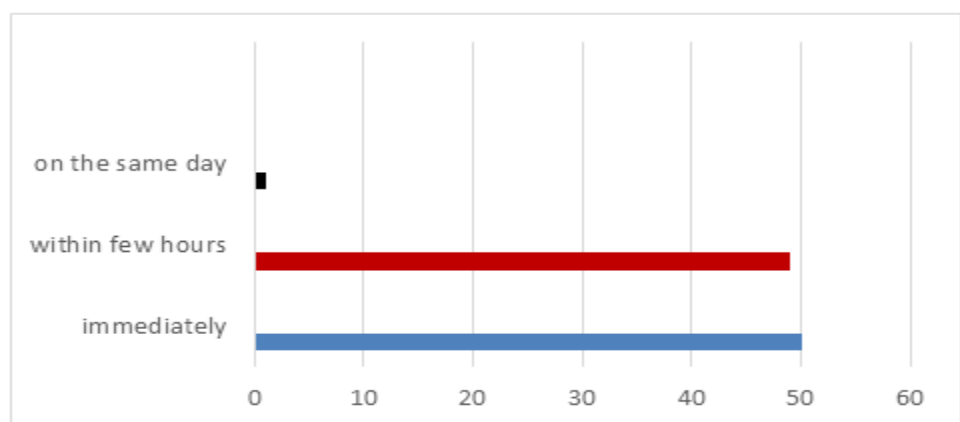


Fig 13

➤ Section-13

It is important to re-plant an avulsed tooth as early as possible. 50% answered it is important to re- plant immediately, 49% said within few hours and the rest 1% said on the same day (7).

14. In a post- extraction situation, if there is bleeding how do you manage?

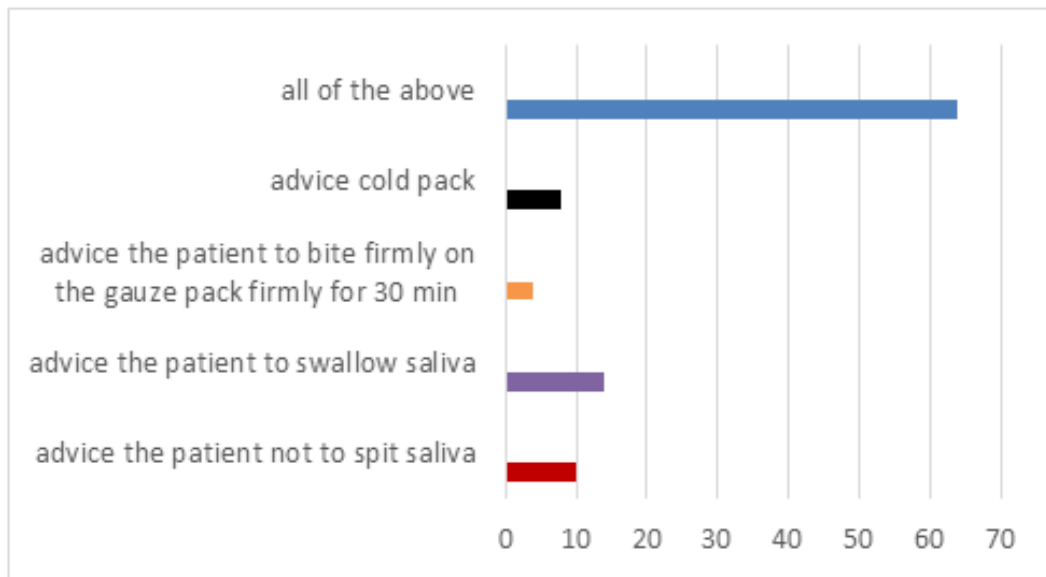


Fig 14

➤ Section-14

Management of bleeding in a post- extraction situation-advise the patient to swallow saliva, to bite firmly on the gauze pack firmly for 30 minutes, cold pack and not to spit saliva. 64% answered correctly (7).

15. If a patient during dental procedure has chair side syncope. How will you manage?

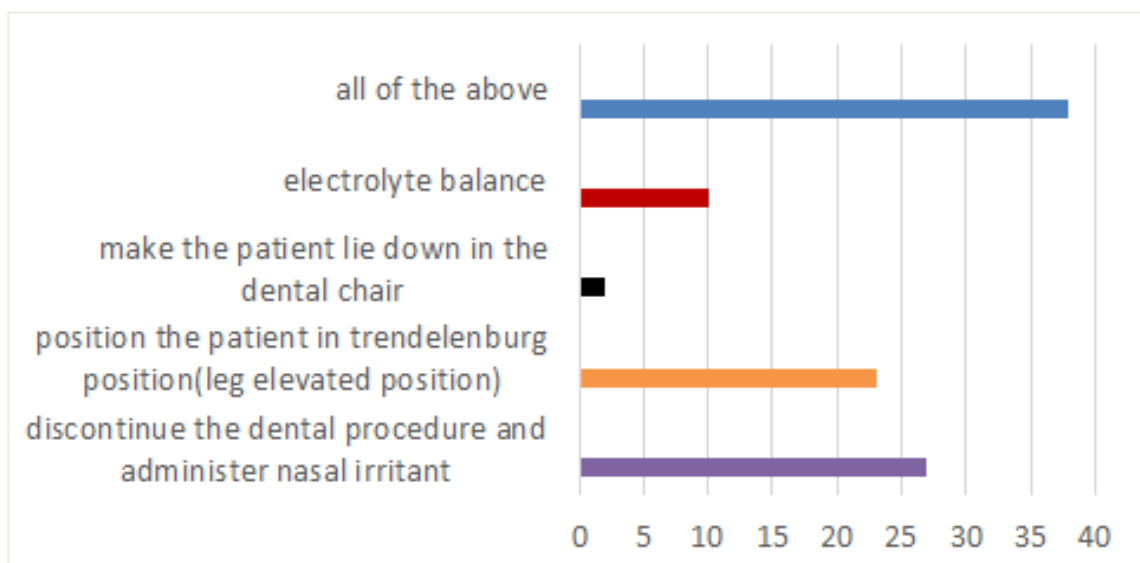


Fig 15

➤ Section-15

Chair side syncope during dental procedure can be managed by discontinue the dental procedure and administer nasal irritant, position the patient in Trendelenburg position (leg elevated position), make the patient lie down in the dental chair and electrolyte balance. 38% of participants responded correctly (11).

16. First step in managing a patient with poor response to verbal/physical command

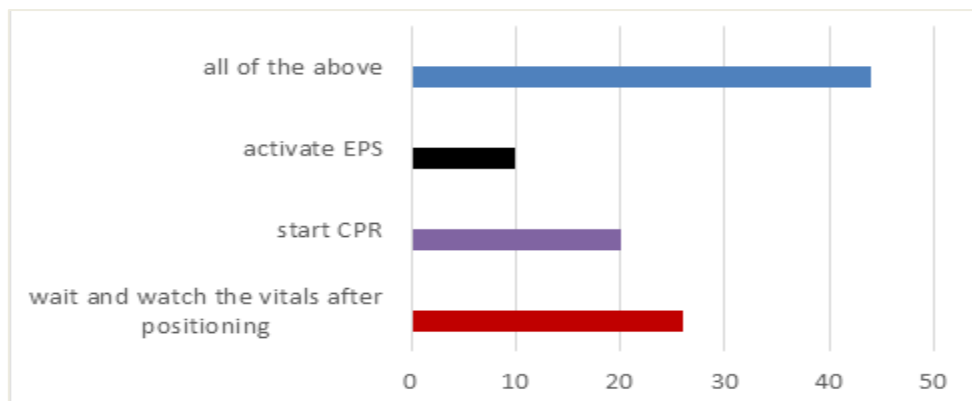


Fig 16

➤ Section-16

Steps in managing a patient with poor response to verbal/ physical command -wait and watch the vitals after positioning, start CPR, activate EMS(Emergency Medical Service). 44% of participants responded correctly (2).

17. How will you manage hypoglycemia?

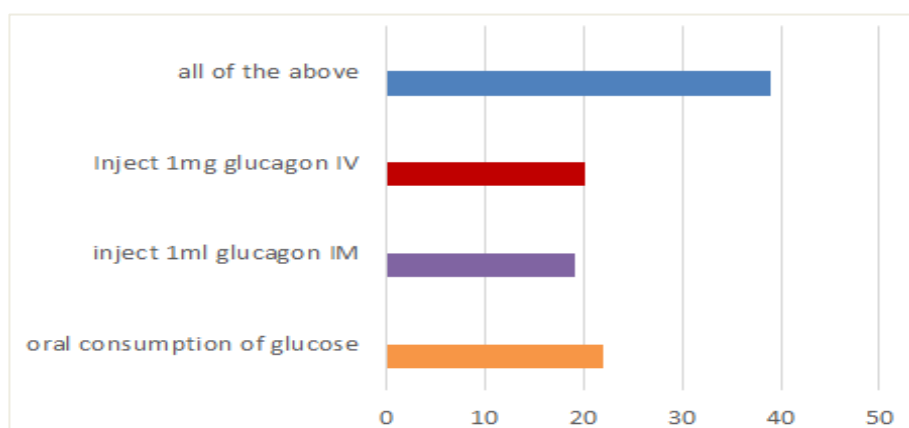


Fig 17

➤ Section-17

Depending upon the patient’s condition, management of hypoglycemia includes oral consumption of glucose, inject 1 ml glucagon IM, and inject 1 mg glucagon IV. 39% of participants answered correctly (2).

18. A patient who complains of chest pain should be positioned?

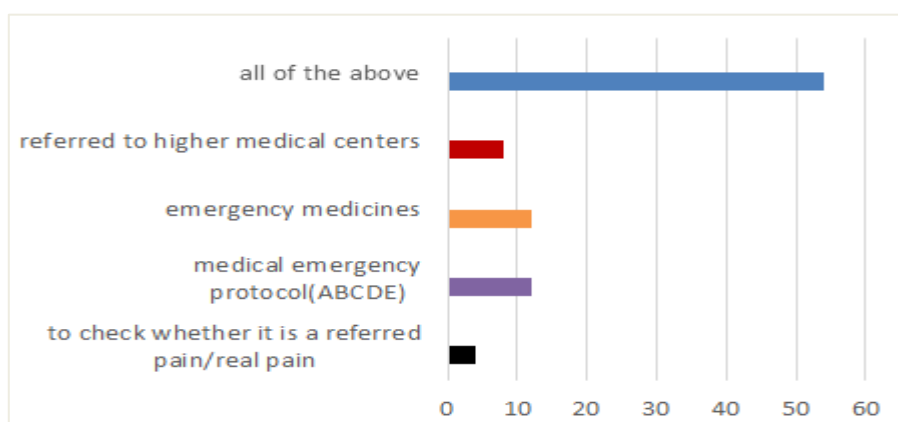


Fig 18

➤ Section-18

If a patient complains of chest pain first thing is to check whether it is a referred pain/ real pain, and to provide emergency medicines, follow medical emergency protocol (ABCDE) and referred to higher medical services (11).

19. What is the best way to prevent dry socket?

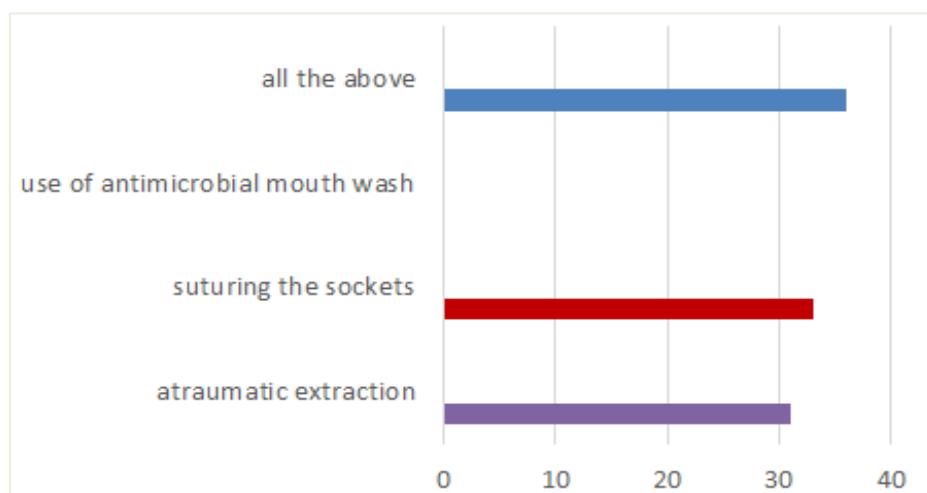


Fig 19

➤ Section-19

Best way to prevent dry socket is to perform atraumatic extraction, suturing the sockets after extraction and use of antimicrobial mouth wash. 36% of participants answered correctly. (3)

20. What are the post-extraction instructions should not be given to the patients?

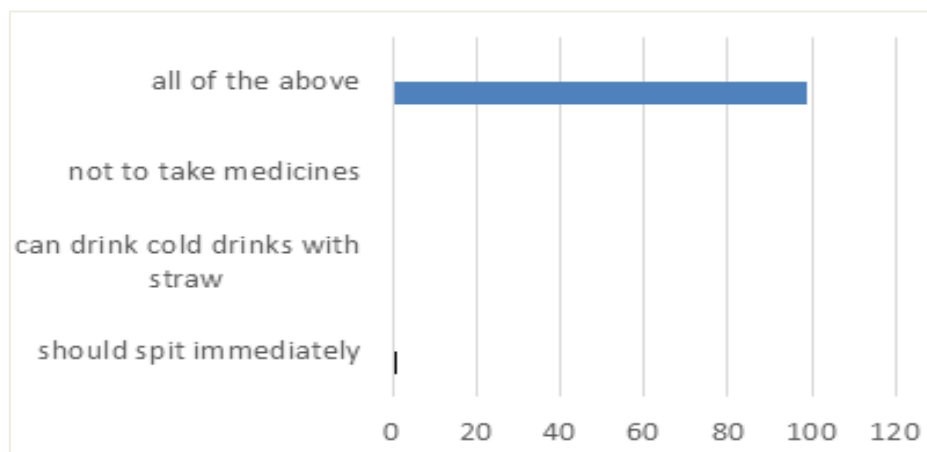


Fig 20

➤ Section-20

When the question was asked about the don'ts after extraction, 99% of participants answered correctly (7).

**IV. DISCUSSION**

The current study was sought to document the knowledge and awareness in chair side management of medical emergencies among dental students. The overall level of knowledge is fairly good. A thorough clinical evaluation and obtaining detailed history is one of the important aspects to prevent complications. However, students did not have sufficient knowledge and management to deal with it. This could be due to lack of exposure to such patients during their practice. About 87% of participants felt inadequately prepared to deal with medical emergencies upon graduation. Developments in vocational or general professional training may provide a useful opportunity to consolidate these skills. Maximum

number of dental students has faced syncope (84%) as an emergency situation in their clinical practice and only 38% were aware of the management of chair side syncope (2). These necessities the need for improving knowledge about the chair side medical emergencies and their management, lack of knowledge and awareness could be a life threatening and requires immediate action. when the question was asked about the training they have received during the course of study, 62% were trained to do CPR, 34% answered they had received training for carotid pulse check and only 3% had received training for intravenous injection. There was a need for improved levels of training in CPR, subcutaneous injection, Intravenous injection and carotid pulse check in UG training and regular revision to maintain these skills. It is also important that what they are



required to possess in realistic in terms not only of the training they have received but considering the number of times these skills are likely to be performed in patients (2). If and when any complication occurs, it is always recommended to explain the situation to patient attender. 97% of participants agreed to it. When the question was asked about the pre and post-operative measures to be taken in hemophilic patient, only 18% had a good knowledge and the rest were unaware (8). This poor response has to be taken into consideration and further studies have to be conducted to improve the knowledge about the bleeding disorders and the management. Primary management of epileptic attack in the dental chair is making the patient lie on lateral position and wait for the seizure to end. This study shows that 71% had answered correctly. Proper detailed medical history, and the recent episode of seizure can reduce the risk of epileptic attack in the dental chair (6). 54% were aware about the knowledge of emergency drugs and their routes of administration. Adequate training in the use of drug and their route of administration can also enhance confidence. Protocols should be in place so that staff members know their role in managing emergency situations. In our study 21% were aware of the common drugs used in dentistry that can precipitate an allergic reaction which was comparatively less when compared to the study done by Khadijah Mohideen "basics of management of medical emergencies in dental office and emergency drug kit" (1). When the question was asked about the drug of choice in anaphylaxis, only 23% responded correctly. Drug of choice in anaphylaxis includes adrenaline, antihistamine, vasodilator and corticosteroids. Students should have good knowledge about the drug of choice and the recommended dosage to be given (8). In the section of dry socket, only 28% of participants knew the cause for the dry socket. The best way to prevent dry socket is atraumatic extraction, use of antimicrobial mouth wash and suturing the sockets after extraction (3). Vasoconstrictors increase the risk of developing a dry socket which was mentioned by Fridrich in 1990 (Fridrich et al) 84% of participants agreed with this correct information (4). If an adjacent tooth is mistakenly subluxated during extraction, it is recommended to stabilize with non-rigid fixation, 54% of participants agreed with this correct answer. It is important to re-plant an avulsed tooth immediately, knowledge about the management of avulsed tooth and media of storage should be educated mainly to the school teachers since Avulsed tooth are mostly commonly seen among the school children (sports injury) and road traffic accident). Hypoglycemia and hypotension are most commonly encountered in dental chair during extraction, management of these conditions at an early intervention can prevent complication. Students should be well trained to manage such situations. Knowledge about the post extraction instructions was found to be good, almost 99% of participants responded correctly. Dental students should be well prepared to face any sort of medical emergencies which gives them a confidence in their clinical practice (7).

## V. CONCLUSION

Within the limits of our study, the knowledge is accepted except in some points of specific information. The majority of respondents indicated a need for further training to manage medical emergencies. Students were very confident in management of bleeding after extraction and dry socket. Greater number of dental students in the present study has a healthy knowledge about awareness of chair side management of medical emergencies among dental students, but there were less confidence in handling some medical emergencies. Thus, in order to improve the aspect of patient care, additional training is required in order to refresh their knowledge (6)(1).

## REFERENCES

- [1]. Khadijah Mohideen , Basics of management of medical emergencies in dental office and emergency drug kit, International Journal of Scientific study , July 2017, volume 5, issue 4. DOI:10.17354/IJSS/2017/378.
- [2]. Dr. M.P. Santhosh Kumar, Knowledge, attitude and perceived confidence in handling medical emergencies among dental students, Aakil Ahmed et al/J. Pharm. Sci. & Res. Vol. 8(7), 2016, 645-649.
- [3]. Mazen Doumani, The internship dentists knowledge about dry socket, International Journal of recent scientific research, Vol 8, issue 9, pp.19942-19943, September 2017.
- [4]. Kirk L. Fridrich et al, alveolar osteitis following surgical removal of mandibular third molars, American Dental Society of Anaesthesiology 1990.
- [5]. G.J.Atherton, Medical emergencies in general dental practice in Great Britain part3: perceptions of training and competence of GDPs in their management, British Dental Journal, vol 186, No. 5, march 13 1999.
- [6]. Liqaa Abdulridha Raffee, Final year dental students' perception of knowledge, training and competence in medical emergency management, Canadian Center of Science and Education, Global Journal of Health Science; Vol. 10, No. 6.; 2018.
- [7]. Ali Atiyah Derrbishi, A study about knowledge and awareness regarding post- extraction complications among dental interns of the college of dentistry, Journal of International Medicine and Dentistry 2017, 4(3): 76-85
- [8]. Dr. Sam Schulman, Protocols for the treatment of hemophilia and Von Willebrand disease 3<sup>rd</sup> edition, Hemophilia of Georgia USA, World Federation of Hemophilia (WFH) 2008.
- [9]. AlHindi M, Dry socket following teeth extraction: Effects of excessive socket saline irrigation, Journal of Oral health and Dental Science, October 19 2017.
- [10]. Krishna D Prasad, Medical and Dental emergencies and complications in dental practice and its management, Journal of Education and Ethics in Dentistry, vol.2, issue. 1, 2012.
- [11]. Mona Al-Hassan, preparedness of dental clinics for medical emergencies in Riyadh, Saudi Arabia, The Saudi Dental Journal, Vol. 31, issue. 1, January 2019.