



Knowledge and Attitude about Post Extraction Complication among Dental Students

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ABSTRACT

Aim: To evaluate the knowledge of dental students regarding post extraction complications and their management.

Materials and method: This cross-sectional survey was conducted across dental colleges of Chennai in October 2019. A questionnaire consisting of 14 questions was formulated and distributed among dental students. Based on the responses from the dental students to this multiple choice based questionnaire, the survey was analyzed.

Results: Among 100 students who participated in this survey, nearly 55.2% of dental students reported bleeding to be the most common postoperative complication, followed by pain 28.8%, dry socket 9.6 %, and swelling which is 6.4%. 98% dental students agreed that thorough medical history can be useful for treating complications. 55.6% of dental students responded that localized pressure by biting on gauze arrest bleeding. Majority of students were aware that displacement of the tooth into maxillary sinus is highly seen during extraction of a maxillary 1st molar tooth.

Discussion: Difficulties with extractions and complications are unpredictable. Having a thorough medical history prior to surgery will allow the dentist to better deal with the complications that may arise and the dentist should be certain to always follow proper surgical techniques and know limitations prior to beginning any extraction. The most common complication following dental extraction is prolonged bleeding. The most frequently reported sequelae observed after any surgical procedure was swelling of the soft tissues around the operation site which often persists for 48hrs. Smokers have more incidence of dry socket after extraction than nonsmokers. Ecchymosis usually occurs in elderly patients. Majority of students were aware that displacement of tooth into maxillary sinus is highly seen during extraction of maxillary 1st molar.

Conclusion: This study revealed that knowledge about post extraction complications among most of the undergraduate dental students was adequate. Good Quality of treatment can be maintained, if future dentists have a good knowledge of post extraction complications and the methods of preventing and managing them.

Key words: Bleeding, Dry socket, Gelfoam, pain, Extraction, Complications.

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INTRODUCTION

The most common dental procedure done in dental clinics is the extraction of teeth. Post extraction complications generally do not occur; however, there are times when the dentist is faced with post extraction complications. In such instances, the dentist should be aware of the treatment procedures and management of post extraction complications. Adequate training

is imparted to the dental doctors during the course of their curriculum and training in an internship. Complication rates may vary, which are influenced by different factors, includes age and health condition of the patient, gender, tooth impact level, surgeon's experience, smoking, intake of contraceptive medicine, quality of oral hygiene, and surgical technique among others [1].

Extraction is the most common procedure done in dentistry in India, and knowledge about post extraction complications and their management can prevent the occurrence of untoward sequelae following extraction. Hence this issue is very

significant, as it is concerned with the quality of treatment. The rationale of our study is to assess the knowledge regarding post extraction complications among undergraduate dental students of our institution, which will enable us to make necessary changes in the teaching curriculum as implicated. Complications in exodontia are not always avoidable. Exodontia is the painless removal of whole tooth or tooth root with minimal trauma to the investing tissues with uneventful wound healing, thus ensuring no postoperative prosthetic problems [2]. They should perform independently and safely while having sufficient knowledge to manage a contingency without fear. Starting from simple complications such as dry socket or tooth root fractures, the severity can even escalate to morbid sequelae where the tooth can get displaced to adjacent anatomic spaces [3,4].

The rationale of our study is to assess the knowledge regarding post extraction complications among dental students of our institution, which will enable us to make necessary changes in the teaching curriculum as implicated.

With a rich case bank established over 3 decades we have been able to publish extensively in our domain [5–15]. Based on this inspiration we aim to assess the knowledge attitude and practice of post extraction complications among dental students.

MATERIALS AND METHOD

A self-administered questionnaire of 13 questions was administered to 100 students, belonging to third, final year and internship trainees of the undergraduate dental program in Saveetha Dental College and Hospital, Saveetha University, Chennai. The questionnaire consisted of 13 validated questions and was personally distributed to the students. Their responses were collected, and descriptive statistical analysis was done. The questionnaire was divided into two sections. The first section is assessing the knowledge of graduating dental students and the second section assessing the attitude of graduating dental students in knowing more about the complication following extraction and their management. Data extracted were statistically analyzed using SPSS and results obtained.

Questionnaire

The questionnaire was designed to collect the data regarding the basic knowledge and attitude of undergraduate dental students about the post-extraction complications and its management. The data from the participants were collected, statistically analyzed, and results were obtained.

Description of questionnaire

1. Are the following conditions the complications of tooth extraction? Prolonged bleeding, infection, dry socket, jaw fracture, sinus perforation

a. Yes

b. No

2. Most common post-extraction complication?

a. Prolonged bleeding

b. Dry socket

c. Pain

d. Swelling

3. Having a thorough medical history before extraction will allow the dentist to better deal with the complication that may arise

a. Yes

b. No

4. Pattern of pain experience following tooth extraction

a. No pain

b. Mild pain

c. Moderate pain

d. Severe pain

5. Which of these conditions make the extraction more difficult?

a. Grossly decayed tooth

b. Abnormal root morphology

c. Teeth exhibiting hypercementosis

d. Endodontic treated tooth

6. Displacement of tooth into the maxillary sinus is highly seen during the extraction of:

a. Maxillary first molar

b. Maxillary second molar

c. Maxillary third molar

d. All of the above

7. Ecchymosis is most commonly seen in?
 - a. Elderly patients
 - b. Younger patients
 - c. All age group
8. What is dry socket?
 - a. Alveolar osteitis, where a blood clot fails to develop in the tooth socket
 - b. Throbbing pain in the gum
 - c. Bad smell or taste coming from the tooth socket
 - d. All of the above
9. Which of the following conditions can favor dry socket after extraction?
 - a. Women taking oral contraceptive
 - b. Patient with uncontrolled diabetes mellitus
 - c. Patient age between 30 and 40
 - d. All of the above
10. The clinical diagnosis of dry socket is based on the following findings
 - a. increasing severe pain 2-3 days after extraction
 - b. Halitosis
 - c. the alveolar bone visible in the extraction socket, but no purulent exudate present
 - d. All of the above
11. Does smoking have any effect on the incidence of dry socket?
 - a. Yes
 - b. No
 - c. Don't know
12. How is dry socket treated?
 - a. Irrigation with warm saline
 - b. Curettage of the extraction site
 - c. wait and watch
 - d. None of the above
13. What substance should never be placed into the extraction socket?
 - a. Petroleum-based compounds and tetracycline powder
 - b. Adrenaline
 - c. Hemostatic agent

14. How will you manage prolonged bleeding?
 - a. Direct pressure over the socket
 - b. Suturing
 - c. Crushing the foramen socket with hemostat
 - d. Applying hemostatic agents.

RESULTS AND DISCUSSION

In this study among 100 dental students, almost 97.2% responded to the question correctly saying that all the conditions like prolonged bleeding, pain, swelling and dry socket are the complication of post extraction and the rest 2.8% students replied no to the question (Figure 1). 55.2% of respondents given the correct answer as prolonged bleeding as a common complication of extraction; which is followed by 28.8% pain, 9.6% dry socket and 6.4% swelling (Figure 2). Out of the 100 students 98% said yes and 2% said no that having a thorough history prior to extraction will allow the dentist to better deal with the complication that may arise (Figure 3). The pattern of pain experience following tooth extraction is reported by 46.8%-moderate pain, 21.6%-mild pain, 16.8% of no pain and 14.8% severe pain (Figure 4). 42.4% of students say endodontic treated tooth pose more difficulty in extraction followed by 34% grossly decayed tooth 13.2% hypercementosis and 10.4% abnormal root morphology (Figure 5). 48.8% of respondents reported that the displacement of tooth into the maxillary sinus is highly seen during the extraction of maxillary 1st molar (Figure 6). Ecchymosis is commonly seen in elderly patients. 52.8% of the respondents

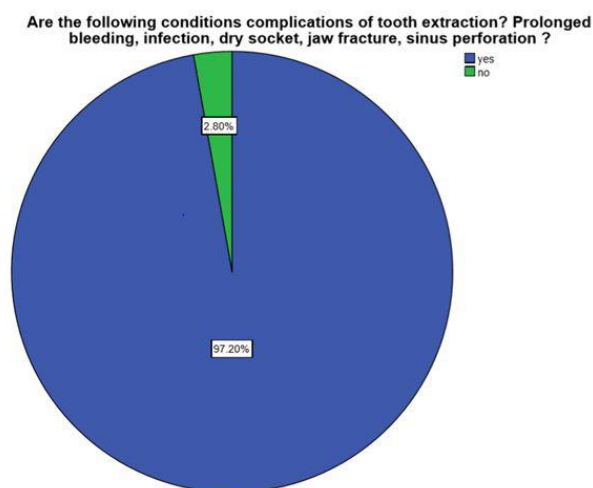


Figure 1: Q1: To the above question 97.20% of students answered yes (blue) and 2.80% of students answered no (green).

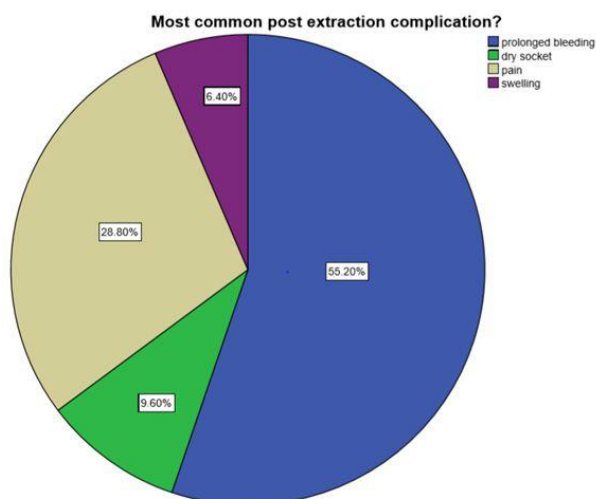


Figure 2: Q2: The number of students giving the correct response to question No. 2 was 55.2% prolonged bleeding(blue), followed by 28.8% pain(brown), followed by 9.60% dry socket(green), followed by 6.40% swelling(purple).

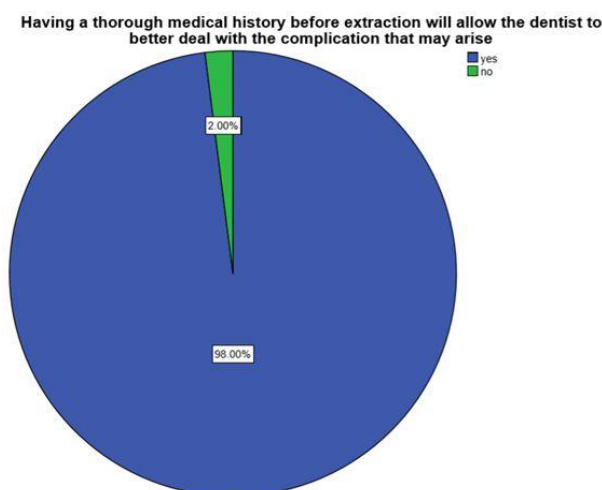


Figure 3: Q3: To the above question 98% students answered yes (blue) and 2% answered no (green).

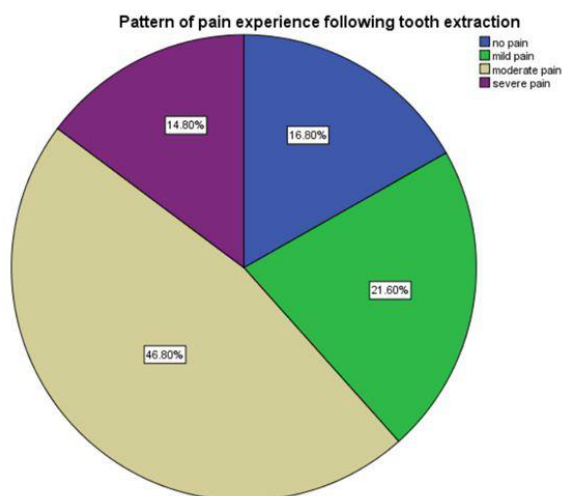


Figure 4: Q 4: The number of students giving the correct response to question No. 4 was 46.8% moderate pain(brown), 21.6% mild pain(green), 16.8% no pain(blue) and 14.8% severe pain(purple).

reported correctly (Figure 7). Dry socket is a painful complication otherwise called as alveolar

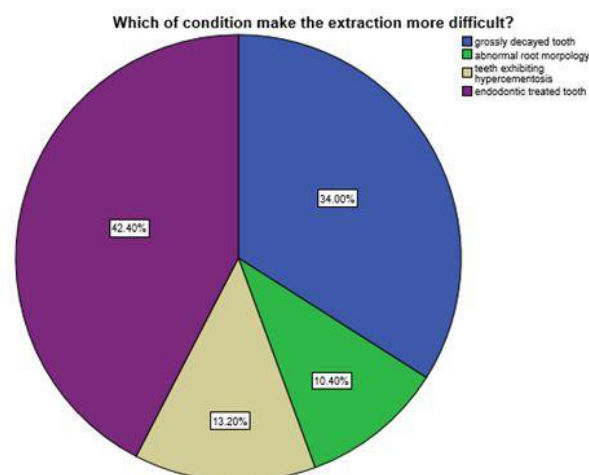


Figure 5: Q5: The number of students giving the correct response to question No.5 was 42.4% endodontic treated tooth(purple), 34% grossly decayed tooth(blue), 13.2% hypercementosis (brown) and 10.4% abnormal root morphology(green).

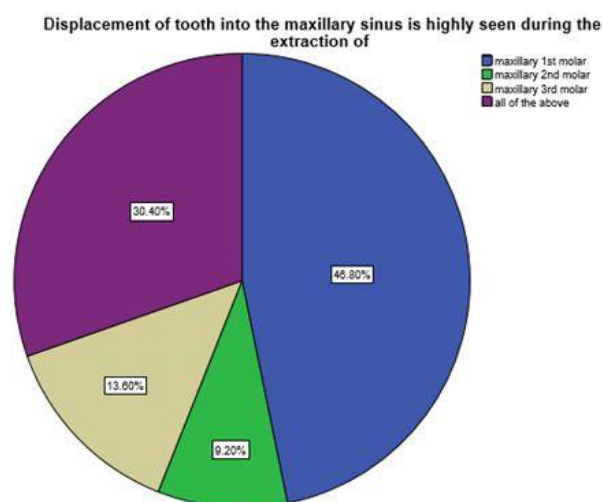


Figure 6: Q6: The number of students giving the correct response to question No. 6 was 48.8 % maxillary 1st molar(blue), 30.4% all of the above(purple), 13.6% maxillary 3rd molar(brown) and 9.2% maxillary 2nd molar(green).

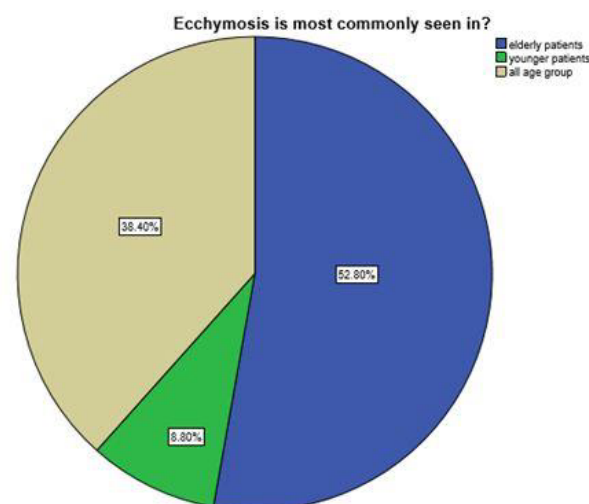


Figure 7: Q7: The number of students giving the correct response to question No 7 was 52.8% elderly patients (blue),38.4% all age groups(brown) and 8.8% younger patients (green).

osteitis. Pain is throbbing in nature with bad breath. 32.8% of students mentioned all of the above followed by 46.8% (alveolar osteitis), 9.2% (throbbing pain in gum), 12% (halitosis) for the question what is dry socket? (Figure 8). Among 100 dental students, 36% of the students gave the answer that women taking oral contraceptives can favour dry socket (Figure 9). Among 100 students, 59% of the students saying all the above for the question clinical diagnosis of dry socket (Figure 10). 89.2% of dental students responded that smoking has an effect on incidence of dry socket (Figure 11). Dry socket is a common complication after 3rd molar extraction and it is treated by simple irrigation with warm saline. 87.6% of the respondents responded correctly to the question (Figure 12 and Figure 13). Localized pressure by biting

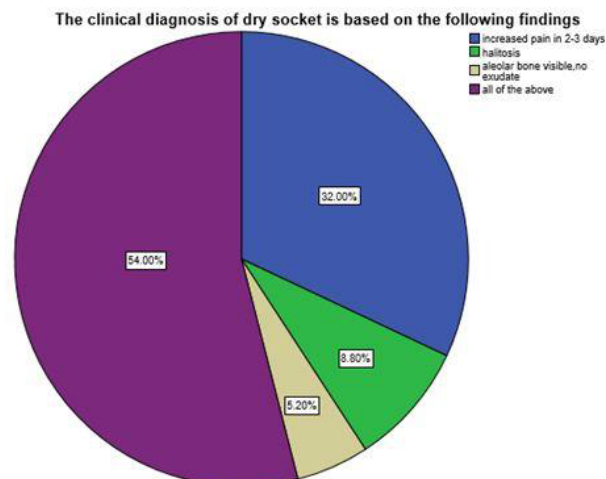


Figure 10: Q 10: The number of students giving the correct response to question No 10 was 54% all of the above (purple), 32% increased pain in 2-3 days (blue), 8.8% halitosis (green) and 5.2% alveolar bone visible no exudate (brown).

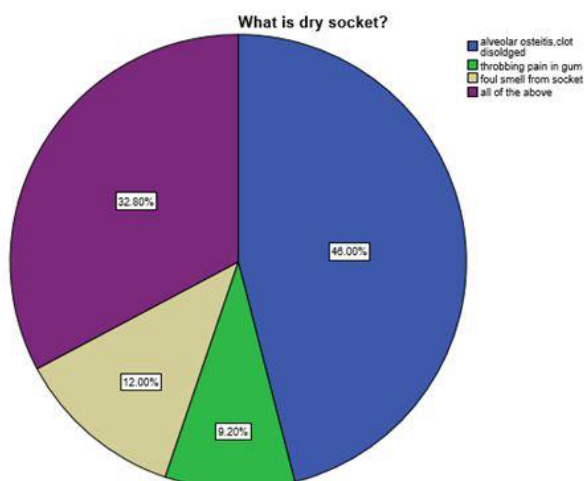


Figure 8: Q8: The number of students giving the correct response to question No 8 was 46% alveolar osteitis clot dislodged (blue), 32.8% all of the above (purple), 12% foul smell from socket (brown) and 9.2% throbbing pain in gum (green).

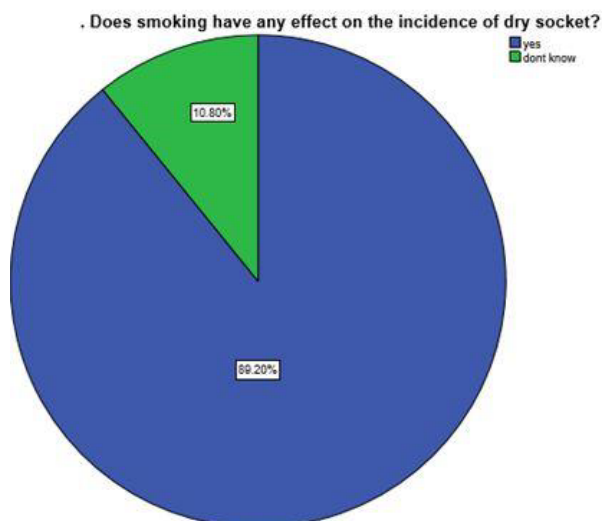


Figure 11: Q 11: To the above question 89.2% answered yes (blue) and 10.8% answered no (green).

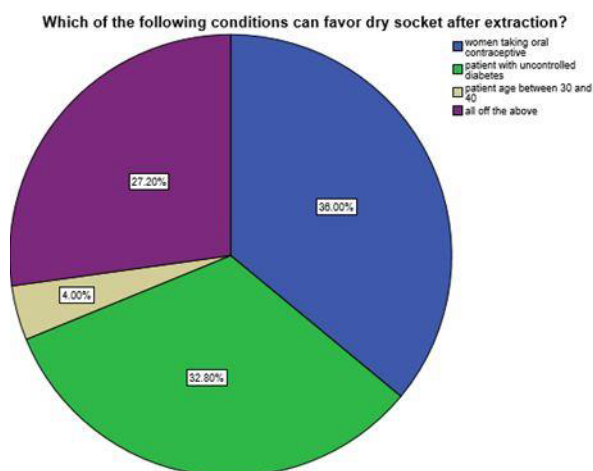


Figure 9: Q9: The number of students giving the correct response to question No 9 was 36% women taking oral contraceptive (blue), 32.8% patients with uncontrolled diabetes (green), 27.2% all of the above (purple) and 4% patient age between 30 and 40 (brown).

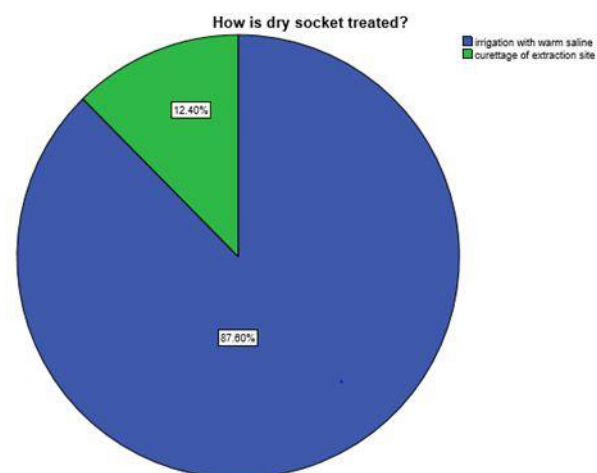


Figure 12: To the above question students answered 87.6% as irrigation with saline and 12.4% as curettage of extraction socket (green).

on gauze is useful in the arrest of hemorrhage post-extraction in healthy patients. 55.6% of respondents responded correctly to this question (Figure 14).

Post-extraction complications generally do not occur; however, there are times when the dentist is faced with post-extraction complications. In such instances, the dentist should be aware of the treatment procedures and management of post-extraction complication. The difficulties of extractions are multi-factorial, and it is unpredictable [16]. In the present study, we tried to evaluate the knowledge of dental students regarding post-extraction complications. Dental extractions are considered minor surgical procedures and the difficulties following these extractions are the complications which are unpredictable [17]. Having a thorough medical

history before surgery will allow the dentist to better deal with the complications that may arise during and after the treatment procedure. To avoid complications, the dentist should be certain to always follow proper surgical techniques and know limitations before begin any extraction [16].

Among 100 students who participated in this survey, nearly 55.2% of dental students reported bleeding to be the most common postoperative complication, followed by pain 28.8%, dry socket 9.6 %, and swelling which is 6.4%. 98% dental students agreed that thorough medical history can be useful for treating complications. 55.6% of dental students responded that localized pressure by biting on gauze arrest bleeding. Majority of students were aware that displacement of the tooth into maxillary sinus is highly seen during extraction of a maxillary 1st molar tooth.

The associations between the age and the post-operative complications result from the fact that the intervention in older patients lasts longer due to increased bone density [18]. Bruce and Chiapasco et al. stated that older patients have more pain, edema, and trismus as postoperative complications [1]. Before any surgical procedure starts, the patient must be informed about the possible incidence of accidents and complications that may occur during the surgical treatment, being aware of the fact that any unexpected situation should be dealt with the best possible way [19]. One of the most common procedures carried out in dental clinics and the most frequent task done at oral and maxillofacial surgery clinics is the extraction of wisdom teeth. This procedure is frequently followed by complications in the mandible including both iatrogenic (e.g., nerve injury and bone fractures) and inflammatory ones, those includes pain, bleeding, swelling with infection, dry socket, nerve injury, and delayed injury [20].

Pain is an important factor in clinical practice and could even discourage patients from seeking dental treatment [21]. It begins after the anesthesia subsides and reaches its peak levels during the 1st post-operative day [22]. A complete hemostasis can be achieved if there is no blood vessel tear in the extraction field. If the blood vessel is torn off then the adequate

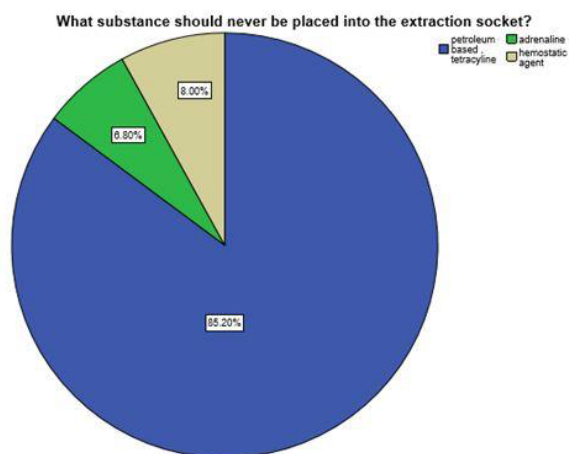


Figure 13: The number of students giving the correct response to question No 13 was 85.2% petroleum based products, tetracycline(blue),8% hemostatic agent(brown) and 6.8% adrenaline (green).

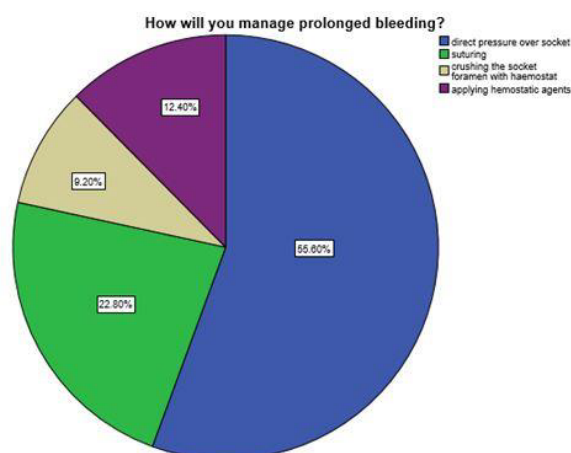


Figure 14: The number of students giving the correct response to question No 14 was 55.6% direct pressure over socket (blue), 22.8% suturing (green), 12.4% applying hemostatic agents (purple) and 9.2% crushing the socket with hemostatic agents (brown).

pressure over the extraction socket which can assist in achieving hemostasis [23].

The most common complication following dental extraction is prolonged bleeding. Once the tooth is removed, the socket should be inspected for the presence of any specific bleeding.

Post- extraction complications will be encountered most commonly after any form of surgery which includes post-operative bleeding 1.7%, hematoma 1.7%, post-operative pain 1.5%, and purulent discharge 1.5% [24]. The next complication after extraction is dry socket otherwise called as alveolar osteitis. There is about 5–68.5% incidence case of dry socket has been reported in literature by many investigators. The average is approximately 3% of all extractions [25].

CONCLUSION

Although the knowledge of dental students in relation to awareness of common complications post-extraction is adequate, they must update their knowledge regarding some rare complications that may occur following extractions. Continuing dental education must include lectures and videos regarding managing some rare complications that can occur during dental surgical procedures. It is the duty of dentists to give proper oral health education and insist the patients to follow the post-operative instructions promptly, thereby occurrence of any untoward postoperative sequelae can be prevented.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

REFERENCES

1. Azenha MR, Kato RB, Bueno RBL, et al. Accidents and complications associated to third molar surgeries performed by dentistry students. *Oral Maxillofac Surg* 2014; 18:459–464.
2. Venkateshwar GP, Padhye MN, Khosla AR, et al. Complications of exodontia: A retrospective study. *Indian J Dent Res* 2011; 22:633–638.
3. Bouloux GF, Steed MB, Perciaccante VJ. Complications of third molar surgery. *Oral Maxillofac Surg Clin North Am* 2007; 19:117–128.
4. Brauer HU. Unusual complications associated with third molar surgery: A systematic review. *Quintessence Int* 2009; 40:565–572.
5. Senthil Kumar MS, Ramani P, Rajendran V, et al. Inflammatory pseudotumour of the maxillary sinus: clinicopathological report. *Oral Surg* 2019; 12:255–259.
6. Wahab PUA, Madhulaxmi M, Senthilnathan P, et al. Scalpel versus diathermy in wound healing after mucosal incisions: A split-mouth study. *J Oral Maxillofac Surg* 2018; 76:1160–1164.
7. J PC, Marimuthu T, Devadoss P, et al. Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study. *Clin Implant Dent Relat Res* 2018; 20:531–534.
8. Eapen BV, Baig MF, Avinash S. An assessment of the incidence of prolonged postoperative bleeding after dental extraction among patients on uninterrupted low dose aspirin therapy and to evaluate the need to stop such medication prior to dental extractions. *J Maxillofac Oral Surg* 2017; 16:48–52.
9. Marimuthu M, Andiappan M, Wahab A, et al. Canonical WNT pathway gene expression and their clinical correlation in oral squamous cell carcinoma. *Indian J Dent Res* 2018; 29:291–297.
10. Jain M, Nazar N. Comparative evaluation of the efficacy of intraligamentary and suprapariosteal injections in the extraction of maxillary teeth: A randomized controlled clinical trial. *J Contemp Dent Pract* 2018; 19:1117–1121.
11. Abhinav RP, Selvarasu K, Maheswari GU, et al. The patterns and etiology of maxillofacial trauma in south India. *Ann Maxillofac Surg* 2019; 9:114–117.
12. Sweta VR, Abhinav RP, Ramesh A. Role of virtual reality in pain perception of patients following the administration of local anesthesia. *Ann Maxillofac Surg* 2019; 9:110–113.
13. Abdul Wahab PU, Senthil Nathan P, Madhulaxmi M, et al. Risk factors for post-operative infection following single piece osteotomy. *J Maxillofac Oral Surg* 2017; 16:328–332.
14. Ramadorai A, Ravi P, Narayanan V. Rhinocerebral mucormycosis: A prospective analysis of an effective treatment protocol. *Ann Maxillofac Surg* 2019; 9:192–196.
15. Patil SB, Durairaj D, Suresh Kumar G, et al. Comparison of extended nasolabial flap versus buccal fat pad graft in the surgical management of oral submucous fibrosis: A prospective pilot study. *J Maxillofac Oral Surg* 2017; 16:312–321.
16. Bui CH, Seldin EB, Dodson TB. Types, frequencies,

- and risk factors for complications after third molar extraction. *J Oral Maxillofac Surg* 2003; 61:1379-1389.
17. Simon E, Matee M. Post-extraction complications seen at a referral dental clinic in Dar Es Salaam, Tanzania. *Int Dent J* 2001; 51:273-276.
 18. Lago-Méndez L, Diniz-Freitas M, Senra-Rivera C, et al. Relationships Between surgical difficulty and postoperative pain in lower third molar extractions. *J Oral Maxillofac Surg* 2007; 65:979-983.
 19. El-Soud NA, El Shenawy H. A randomized double blind clinical study on the efficacy of low level laser therapy in reducing pain after simple third molar extraction. *Macedonian J Med Sci* 2010; 3:303-306.
 20. Capuzzi P, Montebugnoli L, Vaccaro MA. Extraction of impacted third molars. *Oral Sur Oral Med Oral Pathol* 1994; 77:341-343.
 21. Haraji A, Rakhshan V, Khamverdi N, et al. Effects of intra-alveolar placement of 0.2% chlorhexidine bioadhesive gel on dry socket incidence and postsurgical pain: A double-blind split-mouth randomized controlled clinical trial. *J Orofac Pain* 2013; 27:256-262.
 22. Krekmanov L, Nordenram A. Postoperative complications after surgical removal of mandibular third molars. Effects of penicillin V and chlorhexidine. *Int J Oral Maxillofac Surg* 1986; 15:25-29.
 23. Roberts HJ. Control of bleeding after dental extraction during anticoagulant therapy; with particular reference to estrogenic prophylaxis. *JAMA* 1961; 175:962-966.
 24. Kumar V, Hunsigi P, Pradeep MR, et al. Knowledge and attitude of dental surgeons about ocular complications due to dental infection. *J Pharm Bioallied Sci* 2017; 9:147.
 25. Kumar PVS, Srinivasa Kumar PV, Padmaja P. Knowledge, attitude, practices of biomedical waste management among nursing students and staff in a tertiary care hospital. *Annals Int Med Dent Res* 2017; 3.