

# AWARENESS OF MANAGEMENT OF POST EXTRACTION BLEEDING AMONG DENTAL STUDENTS

**RUNNING TITLE:** Awareness of management of post extraction bleeding

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## ABSTRACT

**AIM:** The aim of this study is to analyze the awareness of dental students about the management of post extraction bleeding.

### BACKGROUND:

The most common dental procedure done in dental clinics is the extraction of teeth. Each dental practitioner should know the various complications that can happen during these procedures. 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.

### MATERIALS AND METHODS:

A self-administered questionnaire was prepared with 16 questions related to post extraction bleeding. The questionnaire was distributed to 100 practitioners and the details were recorded individually by the interpreter.

**RESULTS:** This survey included 100 dental students and the results are represented in the form of graphs. All 100 students were aware of the term bleeding disorders and have heard of post extraction bleeding.

**CONCLUSION:** Awareness about management of post extraction bleeding is good among dental students. A little more awareness can be given about various extraction methods and the precautions to be taken while treating patients with bleeding disorders.

**KEYWORDS:** Awareness, Bleeding, Disorders, Extraction, Management,

## INTRODUCTION:

The most common dental procedure done in dental clinics is the extraction of teeth[1]. There are various precautions that has to be taken before and after extraction. Most important step is hemostasis. Hemostasis at the site of a dental extraction is considered to be a prerequisite before the patient leaves the clinic. Once a tooth has been removed, pressure should be placed on the buccal and lingual/palatal surfaces of the alveolus around the socket. Extraction of a tooth via the intra-alveolar approach causes expansion of the alveolus around the root(s) of the tooth. The immediate bucco- lingual pressure reduces the 'dead space' of the wound and is the first step to help gain hemostasis. This should be done immediately following the extraction of a tooth with intact apices, usually termed digital pressure. A piece of sterile gauze may then be rolled up so that it is big enough to cover the socket. This can be placed directly over the socket area and the patient asked to bite down to apply the necessary pressure. In many cases, this firm pressure will allow initial hemostasis to be achieved. The clot should begin at the base of the socket. Sound knowledge of the physiology of hemostasis is important

in understanding how hemorrhage may occur. The process of hemostasis involves vasoconstriction, platelet plug formation and coagulation cascade. Vasoconstriction – vascular spasm in smooth muscle in the walls of blood vessels;

Platelet plug formation – adhesion, interaction and aggregation of platelets; Coagulation cascade/network – clotting factors in the extrinsic, intrinsic and common pathways lead to the formation of fibrin. Clot formation is a dynamic process, involving a balance between the hemostatic and the fibrinolytic systems. The involvement of numerous cells, chemicals and plasma proteins are all required for successful hemostasis. Fibrinolysis occurs when the plasma enzyme plasminogen activates plasmin, which digests the fibrin threads in the clot has direct clinical implications[2]. Post-extraction hemorrhage may be categorized in relation to

timing[3]. Primary hemorrhage – the bleeding occurs at the time of the surgery, Reactionary hemorrhage – 2–3 hours after the procedure as a result of cessation of vasoconstriction;

Secondary hemorrhage – up to 14 days after the surgery. The most likely cause of this is infection[4]. Hemostatic agents and equipment have a wide range of uses beyond post-extraction hemorrhage. Several invasive procedures, such as non-surgical periodontal therapy, periodontal surgery, pulpotomy and the preparations of teeth for indirect restorations may all require the use of appropriate hemostatic agents[5,6,7]. Each dental practitioner should know the various complications that can happen during these procedures. All dental practices should be prepared to deal with the initial management of a hemorrhage, even if onward referral is needed for definitive treatment. This study was done to analyze the awareness among undergraduate dental students about the management of post extraction bleeding.

## MATERIALS AND METHODS:

This study was conducted in Saveetha Dental College and Hospitals, Chennai. Final year students, Interns and Post graduates were included in the study while first, second and third year students were excluded.

A self-administered questionnaire was prepared with 10 questions related to Hand Foot and Mouth disease. The questionnaire was distributed to 100 practitioners and the details were recorded individually by the interpreter.

The questions are as follows:

1. Are you familiar with the term Bleeding disorder ?
  - Yes
  - No
2. If yes, Name any one .....
3. Have you heard of the term post extraction bleeding?
  - Yes
  - No
4. Have you experienced a patient with post extraction bleeding in your practice or in your clinical exposure?
  - Yes
  - No
5. Are you aware of the precautions to be taken while treating patients with bleeding disorders?
  - Yes
  - No
6. Are you aware of various extraction methods used for patients with bleeding disorders?
  - Yes
  - No
7. What do you think is the most common cause of post extraction bleeding?
  - Patient failed to follow post operative instructions
  - The dentist did not give post operative instructions properly
  -
8. What do you think are the causes other than bleeding disorders that can cause post extraction bleeding?
  - Diabetes
  - Hypertension
  - Intake of drugs
  - Smoking
  - All of the above
9. Do you think Local Anaesthesia can cause post extraction bleeding?
  - Yes
  - No
10. Are you aware of the materials used to arrest bleeding?
  - Yes
  - No
11. What materials do you think are more effective?
  - Gel-foam
  - Astringents
  - Dry ice
  - Bone wax
  - Hemostatic gauze
  -
12. Have you heard of tranexamic acid ?
  - Yes
  - No

12. Are you aware of the techniques used to control post extraction bleeding?

- Yes
- No

13. Which technique do you think is more effective?

- Applying increased pressure in the bleeding site
- Suturing
- Vascular hemorrhage
- Electrocautery

14. What do you think can prevent post extraction bleeding?

- Proper history
- Atraumatic extraction
- Giving more importance to post operative instructions

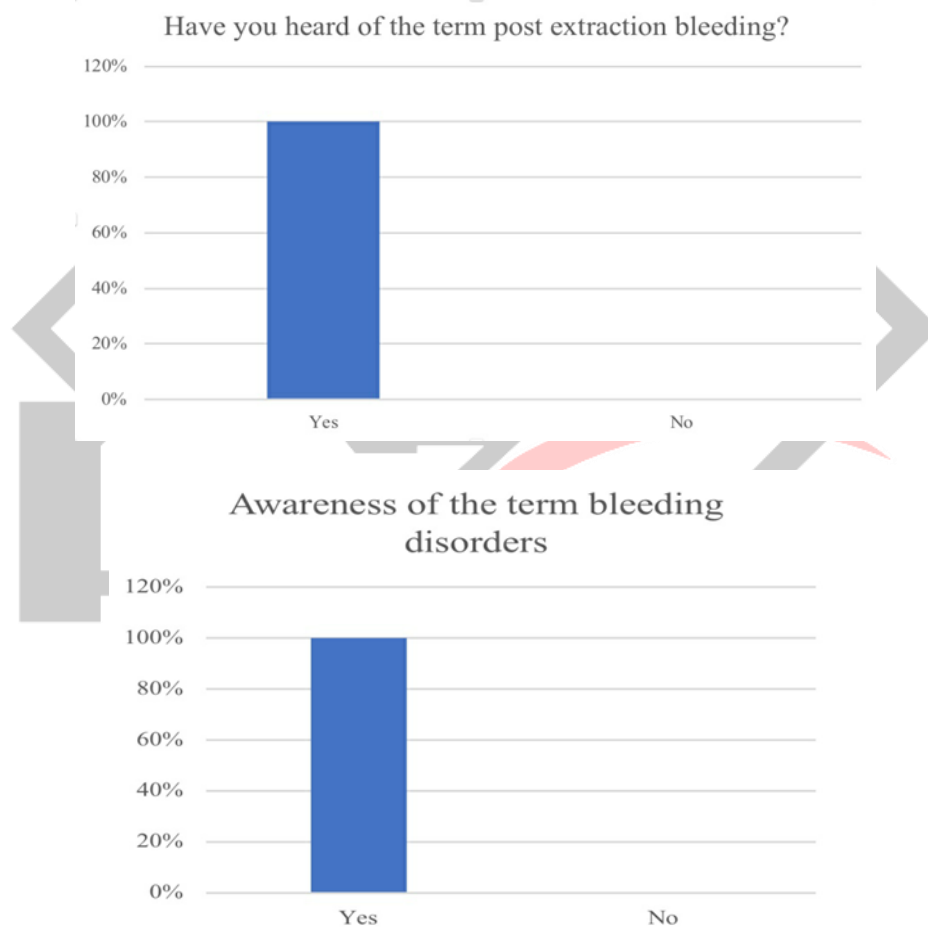
15. If such a scenario takes place in your practice ..

- Will you handle by yourself
- Report to a dental professional

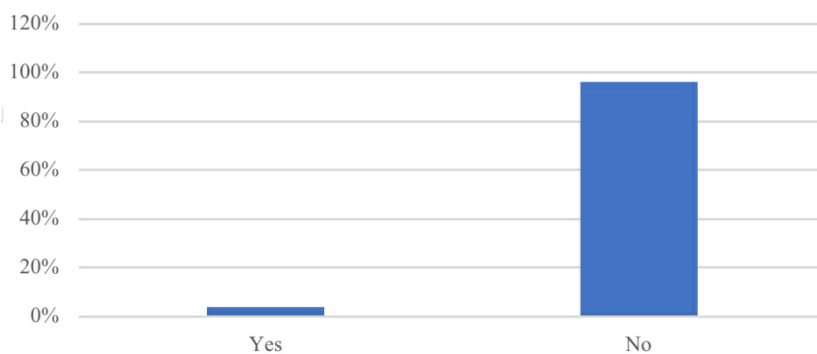
## RESULTS:

This survey included 100 dental students and the results are represented in the form of graphs.

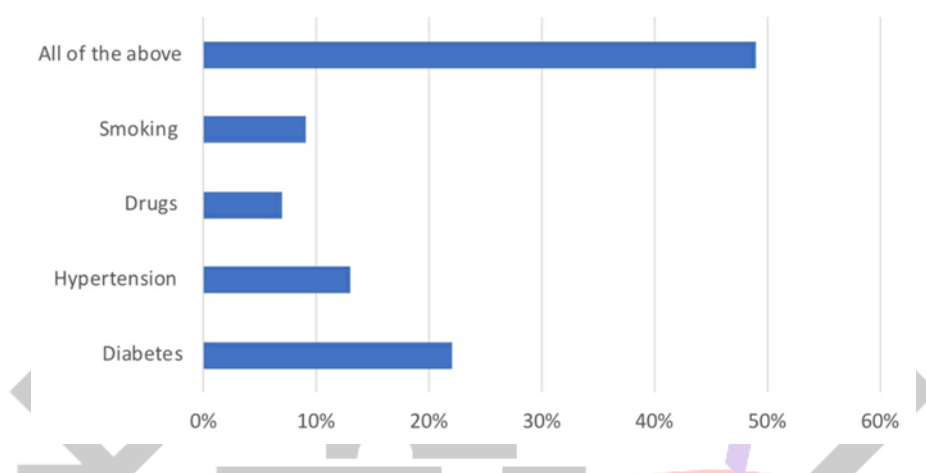
All 100 students were aware of the term bleeding disorders and have heard of post extraction bleeding.



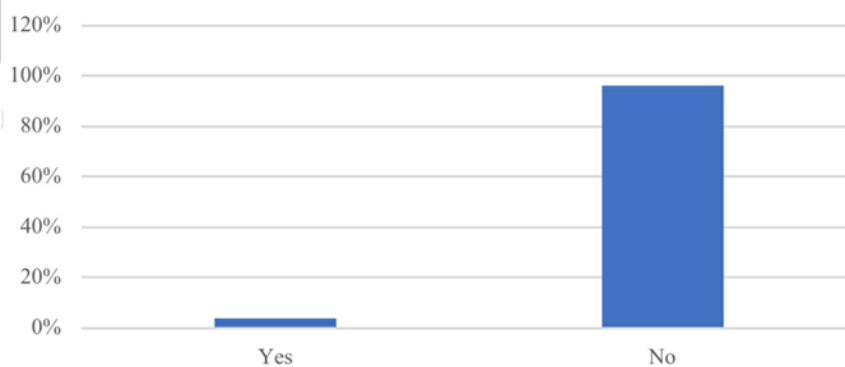
Have you experienced a patient with post extraction bleeding in your practice or in your clinical exposure?

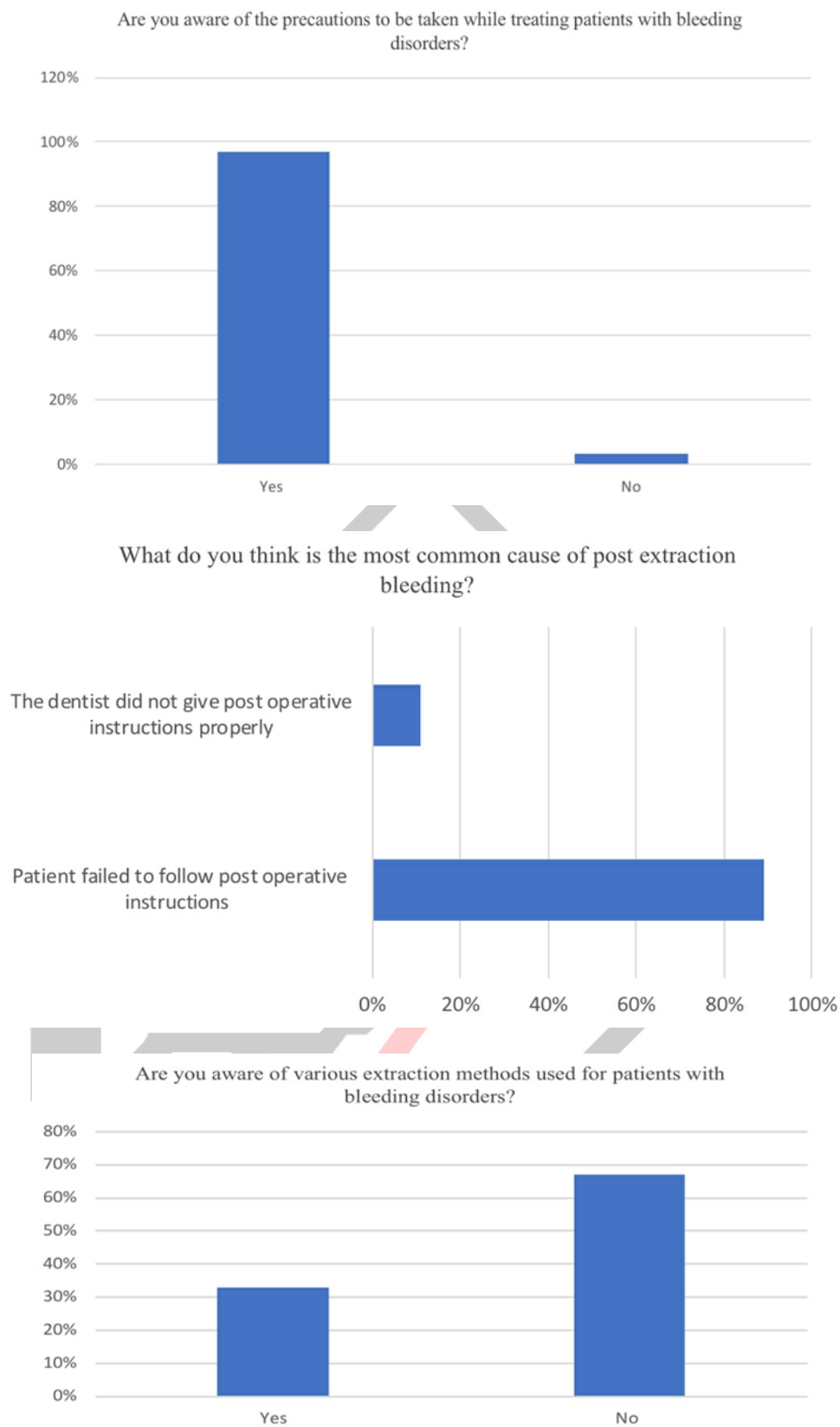


What do you think are the causes other than bleeding disorders that can cause post extraction bleeding?

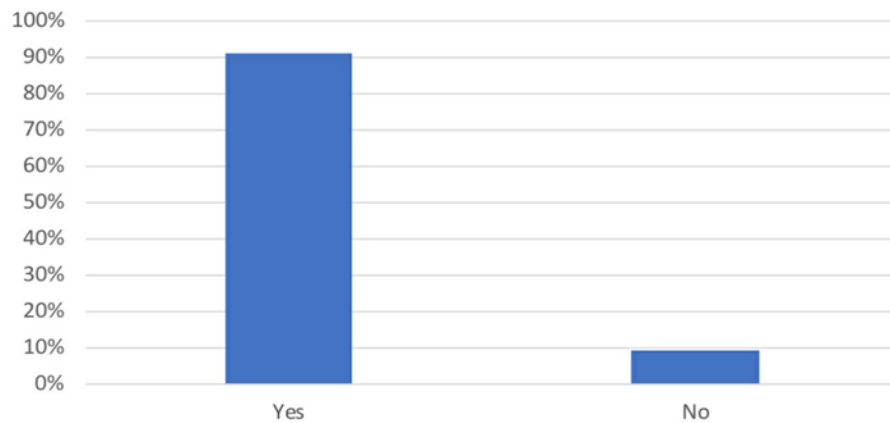


Have you experienced a patient with post extraction bleeding in your practice or in your clinical exposure?

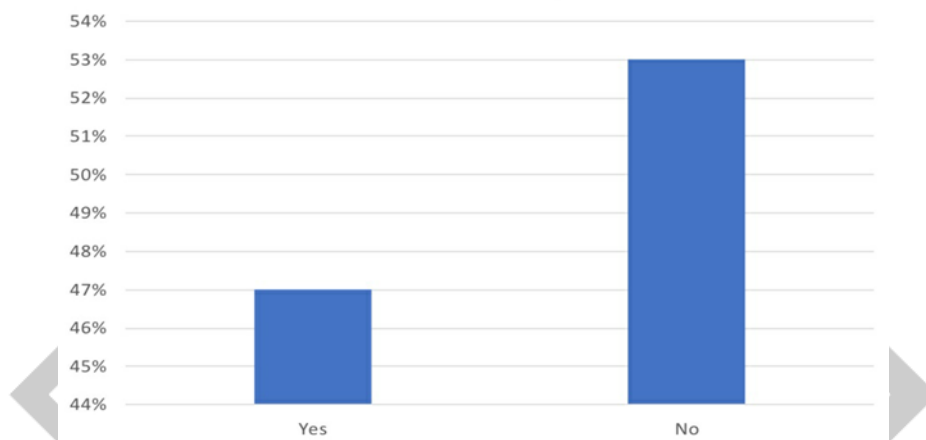




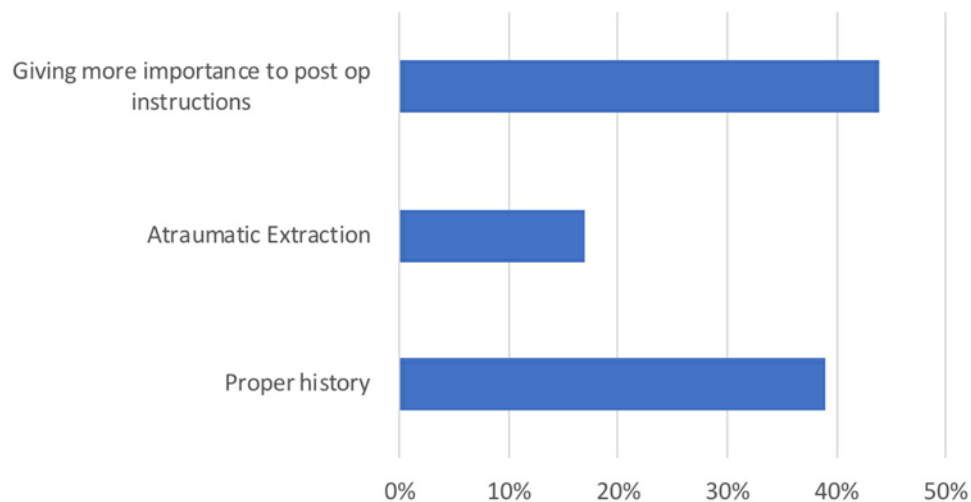
Are you aware of the techniques used to control post extraction bleeding?

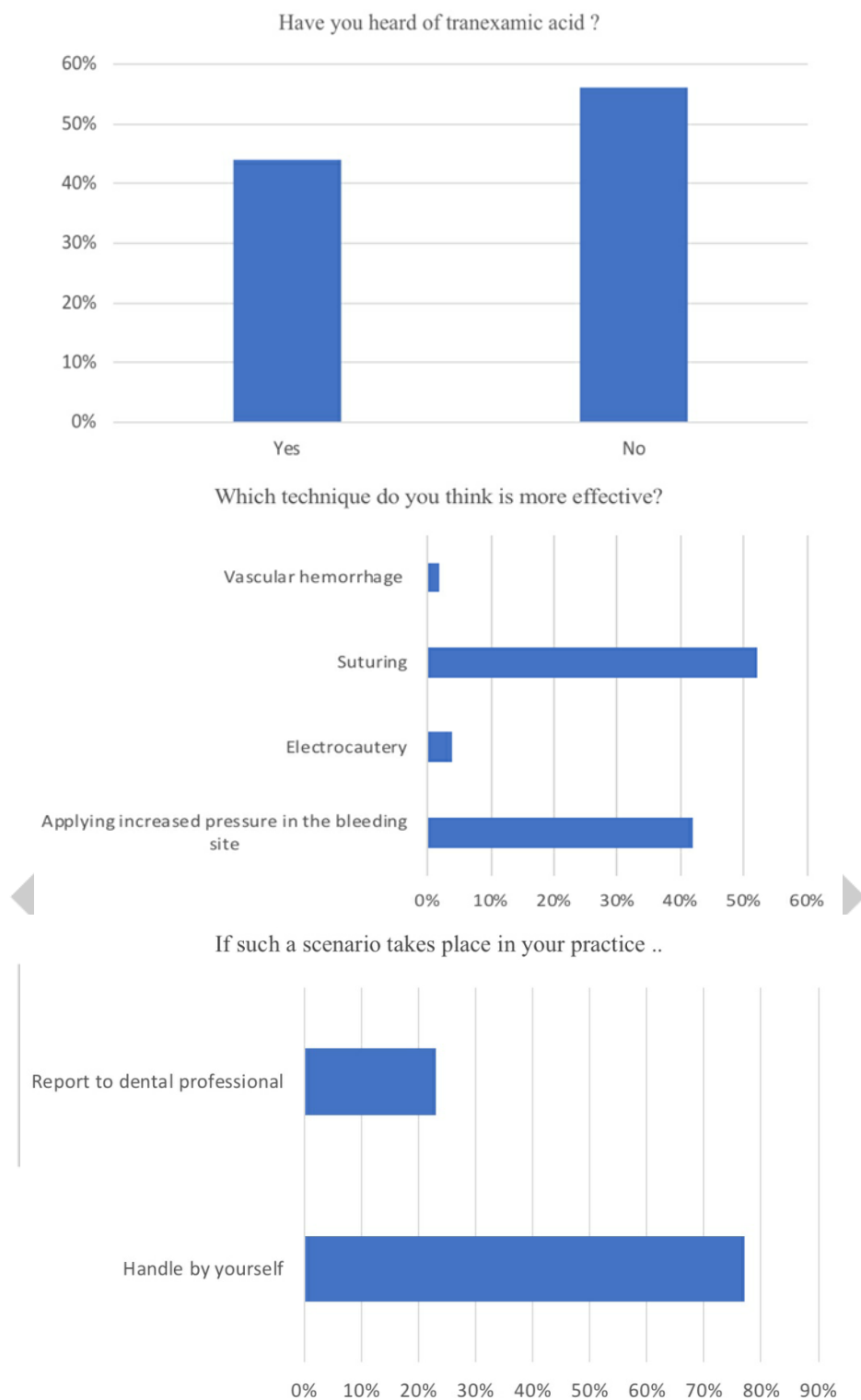


Do you think Local Anaesthesia can cause post extraction bleeding?



What do you think can prevent post extraction bleeding?





## DISCUSSION:

The most commonly performed surgical procedure in dental clinics is the dental extractions. 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. Adequate training is required to the dental students during the course of their curriculum and during training in an internship.

The difficulties of extractions are multi-factorial, and it is unpredictable[8]. 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[9].

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[10]. Complications, such as pain, dry socket, and swelling, paresthesia of the lingual or inferior alveolar nerve, bleeding, and infection are most common. For the general dental practitioner, it is important to be familiar with all the possible complications following the treatment procedure. This improves patient education and leads to prevention, early recognition, and management. In this study, among 100 dental students, only about 4% of dental students mentioned that they have encountered complications after tooth extraction in the dental office. In another study, among 150 dental students, about 22.3% of dental students mentioned that they have encountered such complications[11]. There is also a distinctive association between age and observed post-operative complications. 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. Bruce and Chiapasco et al. stated that older patients have more pain, edema, and trismus as post-operative complications. It seems that female patients show higher accident and complication rates.[12] Monaco et al. reported that the incidence of post-operative edema in female patients (12.7%) is significantly higher than in male patients (1.4%).[13] 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.[14].

Pain is also one of the most common post-operative complications of extraction[15,16,17] and might be caused by the release of pain mediators from the injured tissues.[18] Pain is an important factor in clinical practice and could even discourage patients from seeking dental treatment.[19,20] It begins after the anesthesia subsides and reaches its peak levels during the 1st post-operative day.[21] The other most common complication following pain is prolonged bleeding. Once the tooth is removed, the socket should be inspected for the presence of any specific bleeding. 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 pressure over the extraction socket which can assist in achieving hemostasis.[22] Bleeding from isolated vessels within the bone can occur and treatment involves crushing of the foramen socket and application of bone wax.[23] The intra-oral soft tissues are highly vascularized and may be the site of substantial hemorrhage. Diagnosis is made using good visualization, requiring good lighting and appropriate suction. Soft tissue bleeding may be prolonged as a result of inflamed tissues or a mucosal tear. A local anaesthetic containing a vasoconstrictor may minimize the bleed initially. Sutures will aid socket closure and help bring the tissues together. Several agents that may help hemostasis are available to the dental practitioner. These include Tranexamic acid, Ferric sulphate and Silver nitrate. Tranexamic acid will help in the control of post extraction bleeding. Ferric sulphate will be used as a astringent solution. Silver nitrate is included in this section for completeness. Bleeding from a bony origin may occur following any dental extraction. This can be deep in an exposed socket, with the blood flow, making it difficult to visualize. In most cases, bleeding from within the socket can be arrested by inserting a pack. Cancellous bone can be burnished with a flat plastic instrument or a Mitchell's trimmer to help compress the bone in the area. Bone wax consists of beeswax, paraffin and a softening agent. It may be used to control bleeding within cancellous bone.

Electrocautery is the process of sealing the exposed end of the vessel with heat conduction. If electrocautery is available, the hemorrhaging vessel should be identified and cauterized.

## CONCLUSION:

Awareness about management of post extraction bleeding is good among dental students. A little more awareness can be given about various extraction methods and the precautions to be taken while treating patients with bleeding disorders. Identifying the cause should be given priority because correct diagnosis of the etiology will provide the quickest route to successful management.

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