INTRODUCTION
The importance of soft tissue management is an absolute priority today in any intra and extra -oral surgical procedure if a good esthetic and functional result is to be achieved. There are at least two aspects that are of equal importance in reaching this goal. On the other hand, the design and consequent management of an open method extraction, and the suturing technique.(Jesudasan, Abdul Wahab and Muthu Sekhar, 2015) The development of infections along the line of the incision is potentially a dangerous postoperative event. Some infections that affect the wound margins in certain areas of the body may put the prognosis, in terms of the patient's life, at risk. In less dramatic situations they in case delay healing of tissues involved in transpalveolar extraction. The suturing techniques used to reconstruct the planes for primary healing. To evaluate the prevalence of simple interrupted sutures and figure of eight sutures in transpalveolar extraction. To analyse the use of simple interrupts and figure of eight sutures. The study was conducted as a hospital based case control study in the area of Thiruverkadu, Chennai. The study was carried out by collecting data by reviewing patients data and analysing the data of 86000 patients between June 2019 and March 2020 at the private dental institute. A total number of 326 case sheets were taken for the study after reviewing from intraoral photographs and additional supports. Photographs were accessed to determine the suture method for patients that underwent open method extraction. Pearson Chi Square Test was evaluated using SPSS. Results were recorded. Simple interrupted suture was commonly used compared to figure of eight suture in transpalveolar extraction in the private dental college. Majority of the dental students placed simple interrupted sutures compared to figure of eight sutures postoperative to open method extractions.

Keywords: extraction; figure of eight; open method; simple interrupted; suture; transpalveolar

Simple interrupted vs figure of eight suturing in open method extraction
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Abstract: Development of infections along the line of the incision is potentially a dangerous postoperative event. However, some infections that affect the wound margins in certain areas of the body may put the prognosis, in terms of the patient's life, at risk. In less dramatic situations they in case delay healing of tissues involved in transpalveolar extraction. The suturing techniques used to reconstruct the planes for primary healing. To evaluate the prevalence of simple interrupted sutures and figure of eight sutures in transpalveolar extraction. To analyse the use of simple interrupts and figure of eight sutures. The study was conducted as a hospital based case control study in the area of Thiruverkadu, Chennai. The study was carried out by collecting data by reviewing patients data and analysing the data of 86000 patients between June 2019 and March 2020 at the private dental institute. A total number of 326 case sheets were taken for the study after reviewing from intraoral photographs and additional supports. Photographs were accessed to determine the suture method for patients that underwent open method extraction. Pearson Chi Square Test was evaluated using SPSS. Results were recorded. Simple interrupted suture was commonly used compared to figure of eight suture in transpalveolar extraction in the private dental college. Majority of the dental students placed simple interrupted sutures compared to figure of eight sutures postoperative to open method extractions.
interrupted sutures consist of multiple stitches placed close together. (Rao and Santhosh Kumar, 2018) which distributes tension more evenly across the length of the wound site and helps to keep the tissue edges from coming apart even if one suture breaks. (Abhinav et al., 2019)

However, simple interrupted sutures are among the most commonly used techniques in wound closure of post transalveolar extraction. This is because they offer a number of advantages over a continuous running stitch. They are easier to place since they consist of only a single, shorter strand. This is valuable in the event of infection, which may require the wound to be cleaned or drained of fluid. (Santhosh Kumar and Sneha, 2016)

Unfortunately, some of the unique characteristics can also create complications. Each suture must be tied off with its own knot. If the knot is not tied off correctly, it could cause damage to the surrounding tissues or lead to infections. Since each suture must be carefully placed along the wound edges, closing a laceration with simple interrupted sutures can often be quite time-consuming. (Kumar, 2017)

Advantages of using a figure of eight suturing technique are known to be that it is removable. Traditional subcutaneous sutures cannot be removed and must be resorbable. In other words, it must be made of material that can be absorbed by the oral tissue enzymes. (Kumar and Rahman, 2017) In addition, it allows closure of two layers simultaneously when compared with the interrupted sutures. Ischemia at the edges is a reduction in the blood supply to the supply of body tissues. (Patturaja and Pradeep, 2016) Being removable, one avoids burying material in depth of the tissue, minimizing the chances of developing stitch differences or related complications. The technique enables any length difference between flaps and to be evened up when sutured. It also helps in minimizing the dog’s ear defects. (Jain, Muthusekhar and Baig, 2019)

However, this technique also has disadvantages. The major disadvantage is that this technique is more difficult to master and this technique is sensitive compared to interrupted sutures. Moreover, patients experience slightly more discomfort on suture removal compared to interrupted sutures. Every suturing technique has its own pros and cons. In present study, the sutures were chosen based on the usage of sutures in open method extraction and the comparison was done. (Sweta, Abhinav and Ramesh, 2019)

Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade. (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; J et al., 2018; Menon et al., 2018; Prabakar et al., 2018; Rajeshkumar et al., 2018, 2019; Vishnu Prasad et al., 2018; Wahab et al., 2018; Dua et al., 2019; Duraisamy et al., 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu et al., 2019; Mehta et al., 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran et al., 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma et al., 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi et al., 2020; Samuel, Acharya and Rao, 2020)

Therefore, the aim of this study is to compare the use of simple interrupted and figure of eight suture techniques postoperative to open method extraction in a private dental institute.

MATERIALS AND METHODS
The study was conducted as a hospital based case control study in the area of Thiruverkadu, Chennai. Data was collected from the record management software called DIAS of a private dental institute. From 21st June 2019 till 21st March 2020. A total number of 326 case sheets were reviewed from intraoral photographs and additional supports. Photographs were accessed to determine the suturing techniques for patients that underwent open method extraction. The study was evaluated and approved by the ethical committee of the private dental institute. The inclusion and exclusion criteria were decided as following:

- Inclusion criteria
  - patients underwent open method extractions
  - individual aged above 17 years old

- Exclusion criteria
  - patients below 17 years old
  - incomplete available data
  - improper photographs

Suturing type was evaluated from analyzing post operative intraoral photographs from DIAS. Those collective data was entered into Microsoft Excel with the parameters as following:

- PID Number
- Patient name
- Gender
- Age
- Type of suture

The mentioned data were coded accordingly and transferred into statistical analysis software. A comparison test, Pearson Chi Square association test was done between simple interrupted suture and figure of eight suture post open method extractions. The sutures were placed by dental students on the site of extraction. The results were recorded. The differences considered positively significant as the p value was less than 0.05.

RESULTS AND DISCUSSION

According to figure 1, the gender distribution showed the majority of males have undergone open method extractions. There were 146 male patients (55.9%) and 115 female patients (44.1%) who underwent extraction using this method. This showed male patients were predominant in undergoing open method extractions.

In figure 2, the suture types of techniques given by dental students to patients showed only 3 students have given figure of eight suturing for their patients post open extraction, which is only 1.1%. About 258 patients had simple interrupted suturing post open method extraction.

Figure 3 showed that the most number of extraction with open method was done in tooth number 48 and followed by 28. This showed the open method extraction was done in mostly lower third molars. Finally, the most number of simple interrupted suture was placed in 38 and another in 28. Rest of the tooth was given a simple interrupted suturing, as shown in figure 4.

The statistical result for this study showed that p value was 0.592. Therefore, statistically the difference was not significant as the p value is more than 0.05. Statistical analysis using SPSS 2.0 (IBM 2019) PC version for Windows was done and found to be not significant. (Pearson Chi Square Test; p>0.05 - not significant)

In a similar study conducted by Acar et al.,(Acar et al., 2017) revealed that simple interrupted sutures were used as conventional suturing in oral cavity tissues. This study was similar to the present study. The statistical analysis also showed similar results where the p value was more than 0.05 (not significant).

Another study, Wu et al.,(Wu, 2006) showed that the simple interrupted suture is most commonly used after any oral surgical procedures, including transalveolar extractions. This suture was believed to promote wound eversion and reduce the tension across the wound edges.

In current study, the mean age of a patient was 40 years old. The most common tooth involved was 48. The statistics was positively significant between simple interrupted and figure of eight suturing in an open method extraction. So many previous literatures showed that simple interrupted suture was wisely used in the majority of extraction cases. It was known to be the easiest suture technique among most of the dentists and especially dental students.

The association between simple interrupted and figure of eight suturing in open method extraction is that the importance of sutures are to enhance the socket healing. The possibility of simply interrupted suture to be the majority of choice could be because of the operators skill and knowledge.

However, the consensus of this study is disagreed due to the limitations of this study. The limitations are smaller sample size, limited geographic, single ethnic group, single centered and unicentric study.

In future scope, larger sample size with multi centered study has to be conducted. The dental students should be provided with clinical assessment on baseline of sutures in an open method extraction. The students should improve the way of providing wound closure with many other suturing techniques.

Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh et al., 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai et al., 2019; Sridharan et al., 2019; Vijayashree Priyadharsini, 2019; Mathew et al., 2020)

Fig.1: The graph shows gender distribution of patients undergoing open method extraction to a private dental institute. X-axis represents the genders of patients undergoing an open method extraction and Y-axis represents the frequency of patients had extraction by open method. The graph explains that male patients were predominant compared to female patients who underwent open method extraction.
Fig. 2: The graph explains the frequency of suture type used in post operative open method extraction. X-axis represents the type of suture used post open method extraction procedure and Y-axis represents the number of patients underwent open method extraction. The graph portrays there is a more number of simple interrupted sutures were placed compared to figure of eight sutures.

Fig. 3: Bar graph showed the frequency of tooth number involved in open method extraction. The graph explains that the highest number (74 patients) of tooth numbers undergone open method extraction was 48 which denotes the lower third molar.

Fig. 4: The bar graph depicting the association between the tooth number and type of sutures present post-operative procedure of open method extraction. X axis represents the tooth number involved in open method extraction and Y axis represents the number of patients underwent open method extraction. The graph explains that simple interrupted sutures were placed in relation to 48 the most whereas figure of eight suture seen most in tooth number 38 (Pearson Chi Square Value - 16.968; df=19; p= 0.592 (p>0.05)) not significant. Hence no association between the type suturing technique and the tooth number can be established.

CONCLUSION
Within the limitations of this present study, the majority of the dental students placed simple interrupted sutures compared to the figure of eight sutures postoperative to open method extraction.
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AUTHOR CONTRIBUTIONS
● Design - Kausalyah Krisna Malay, Balakrishnan
● Intellectual content - Balakrishnan
● Data collection - Kausalyah Krisna Malay
● Data analysis - Balakrishnan, Jayanth Kumar
● Manuscript writing - Kausalyah Krisna Malay
● Manuscript editing - Balakrishnan, Jayanth Kumar

CONFLICT OF INTEREST
The authors declare that there were no conflict of interest

REFERENCES


