

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Awareness Of Dental Trauma Management At Combat Sport.

Samir Čimić*¹, Ivan Lukšić², Žiga Lužnik³, and Marijan Kopic⁴.

¹DMD, assistant professor, Department of Removable Prosthodontics, School of Dental Medicine, University of Zagreb, Gundulićeva 5, 10000 Zagreb, Croatia .

²Student of the 4th year, School of Dental Medicine, University of Zagreb, Gundulićeva 5, 10000 Zagreb, Croatia.

³Student of the 3rd year, School of Dental Medicine, University of Zagreb, Gundulićeva 5, 10000 Zagreb, Croatia

⁴DMD, private dental practice, Trg sv. Florijana 28, 48260 Križevci, Croatia.

ABSTRACT

The purpose of this study was to investigate awareness of possible tooth replantation after avulsion and awareness of optimal time for tooth replantation at different combat sports. Study included 56 participants (average 26,7 ± 9,3 years). All responses were collected with anonymous electronic survey which was sent to different combat sports clubs in Croatia. Survey recorded type of combat sport, past dental traumas, loss of consciousness, awareness of possible tooth replantation and awareness of optimal period for replantation. 42 participants (75,0 %) did not experience dental trauma. Two participants (3,6%) had tooth avulsion, 11 (19,6 %) tooth fracture and 1 participant (1,8 %) had tooth dislocation. Eleven participants (19,6 %) experienced loss of consciousness during sparing of fight. Twenty eight participants (50 %) responded negatively on question „Do You know that avulsed tooth can be replanted“. Nine participants (16,1 %) new optimal time for tooth replantation. Combat sports fighters showed low level of knowledge about tooth avulsion and replantation, and low level of knowledge about optimal time for tooth replantation. It is necessary to provide knowledge about dental traumas and dental trauma management information to all combat sports participants, especially fighters.

Keywords: dental trauma, tooth fracture, tooth avulsion, sports.

**Corresponding author*

INTRODUCTION

Sports practicing presents pleasure and is custom all over the world. Still, injuries during sports activities are very common. A large percentage of orofacial injuries are dental traumas [1,2].

Various studies determined large percentage of dental traumas at different kind of contact sports [2,3]. Tiryaki et al [2] found that 35 % of basketball players had experienced oral injuries. Petrovic et al [3] determined that 19,7% of the handball players experienced dental trauma in their handball careers. In a study of Ilia et al [1] the prevalence of orofacial trauma in rugby union players was 64,9%. Combat sports tend to have even larger percentage of orofacial traumas [4], despite more common usage of splints.

A combat sport, or fighting sport, is defined as a competitive contact sport with one on one combat [5]. Shirani et al [4] found that 95 (79,2 %) out of 120 combat sports fighters which participated in study had at least one traumatic injury to the face requiring medical treatment. Ifkovits et al [6] in a Swiss boxers determined that 10,7 % of them had dental accident while practicing their sport.

Dental traumas are classified (WHO classification) as [7]: enamel fracture, crown fracture without pulpal involvement, crown fracture with pulpal involvement, root fracture, crown root fracture, unspecified fracture of tooth, tooth luxation, intrusion or extrusion, avulsion and other injuries associated with laceration of the oral soft tissues. Avulsion describes dental trauma where the tooth is located entirely outside the alveolum. If the tooth is avulsed it must be appropriately replanted and splinted, and it must be treated as quickly as possible [1].

Due to the large percentage of dental and orofacial traumas it is priority to learn fighters about most common injuries, their treatment and mostly easy prevention.

The purpose of this study was to determine awareness of possible tooth replantation after avulsion and awareness of optimal time for tooth replantation at different combat sports.

MATERIALS AND METHODS

Present study was approved by Ethics Committee of the School of Dental Medicine, University of Zagreb. Study was based on a modified questionnaire of the Correa et al [9]. List of questions is showed at Table 1. On-line questionnaire was prepared using the web service SurveyMonkey® (web page <https://www.surveymonkey.com>). After the creation of the questionnaire web link for the on-line questionnaire was generated, which was sent to participants. Representatives of the fighting clubs in Croatia were contacted by phone, and the reasons and importance of this kind of studies was explained to them. At the end of the conversation they were politely requested to forward the link for the on-line questionnaire to active members of their fighting clubs. 56 fighters (average 26,7 ± 9,3 years) responded to the on-line questionnaire. Twenty three participants were practicing boxing, twelve mixed martial arts, eleven kickboxing, four karate, two were practicing wrestling, one Thai boxing, one krav maga, while two participants responded that they were practicing different types of combat sports.

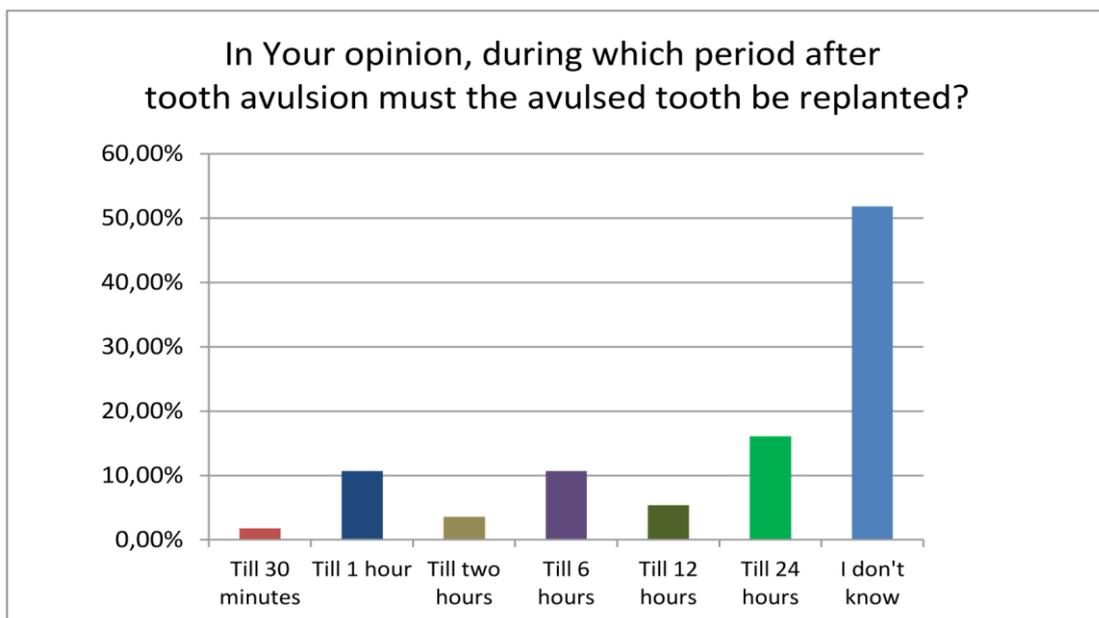
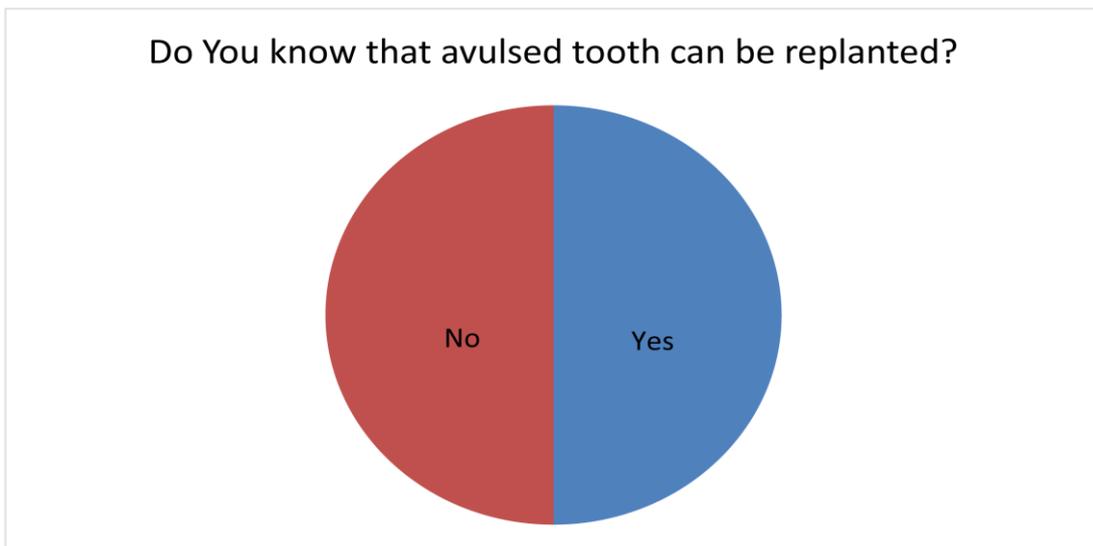
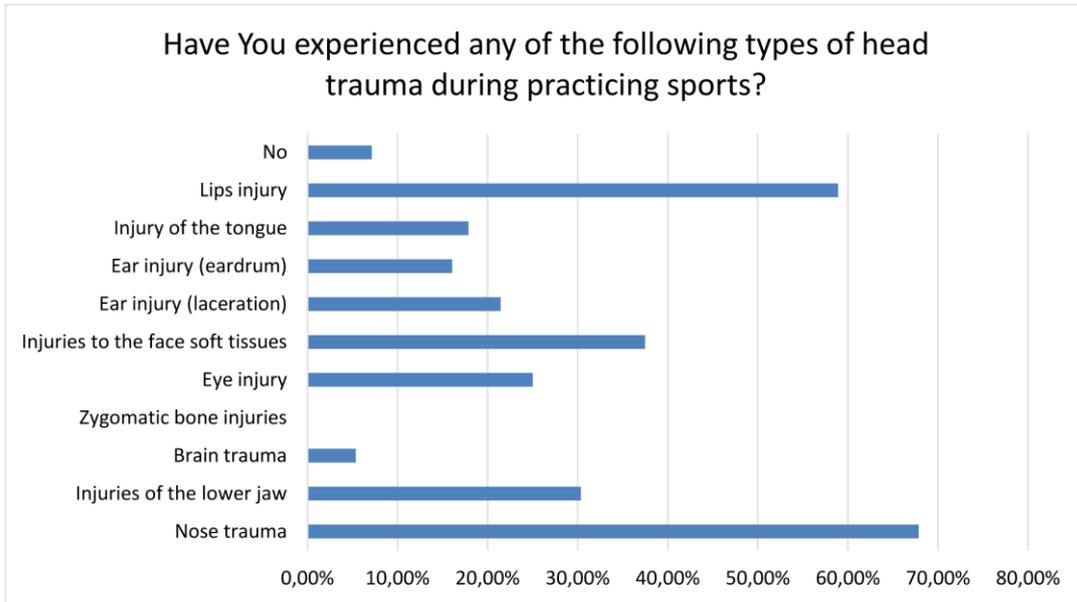
Table 1. List of used questions for assessment of awareness of dental trauma management at combat sports.

Question	Answer
What is Your age?	
Your gender?	Male Female
Type of the combat sport?	
For how long have You been training (how many years)?	
The level of practicing of the combat sports?	Amateur Professionally
How often do you train?	Once a month Fortnightly Once a week Two times a week Three times a week

	Four times a week Five times a week Every day Several times a day Other (please specify):
Have You experienced dental trauma during combat sports practicing (and what type)?	No Tooth avulsion Tooth fracture Tooth dislocation Other (please specify)?
Have you lost consciousness because of the impact during the fighting/sparring?	Yes No
Have you experienced any of the following injury types of head trauma during practicing sports?	Nose trauma Injuries of the lower jaw Brain trauma Zygomatic bone injuries Eye injury Injuries to the face soft tissues Ear injury (laceration) Ear injury (eardrum) Injury of the tongue Lips injury No Other (please specify):
Do You know that avulsed tooth can be replanted?	Yes No
In Your opinion, during which period after tooth avulsion must the avulsed tooth be replanted?	Till 30 minutes Till 1 hour Till two hours Till 6 hours Till 12 hours Till 24 hours I don't know

RESULTS

Average years of training were $9,4 \pm 8,3$ years. Forty-nine participants were male (87,5 %), while seven participants were female (12,5 %). Thirty one participants (55,4 %) identified themselves as amateurs, while twenty five participants (44,6 %) responded as professional fighters. Thirty eight participants (67,9 %) answered that they have been training for five or more years. Forty two participants (75,0 %) answered that they have been training five or more times per week (10 fighters – 17,9 % answered several times per day). On the question „Have You experienced dental trauma during combat sports practicing?“, 42 participants (75,0 %) answered negatively, 11 participants (19,6 %) had tooth fracture, 2 participants (3,6 %) had tooth avulsion and 1 participant (1,8 %) had tooth dislocation. Eleven fighters (19,6%) stated that they lost consciousness during fight or training at least once. Figure 1 shows self-reported distribution of the different types of the head traumas for all participants. Figure 2 shows fighters knowledge about possible tooth replantation. Figure 3 shows fighters knowledge about the optimal period for possible tooth replantation after avulsion. Only 16,1 % of participants answered that the avulsed tooth should be replanted till 2 hours after avulsion.



DISCUSSION

This study investigated awareness of dental trauma management at combat sports fighters. Fifty percent of participants was not aware of possible tooth replantation. Only 16,1 % of participants knew optimal time for tooth replantation.

Eleven to forty percent of all sports injuries involve the face while eight percent of all facial soft tissue injuries are sports-related [10]. At combat sports orofacial traumas are even more frequent than in other types of sport activity [11-13]. Tiwari et al [13] found 18,6 % of tooth injuries during sporting activities (combat sports). Al-Arfaj [14] reported 33,1 % of dental traumas in a study about the knowledge, attitude and practices of sports participants. Present study results (25,0 % of participants experienced dental trauma during sporting activities) are comparable to studies of Tiwari et al [13] and study of Al-Arfaj et al [14].

Present study confirmed crown fractures as the predominant type of dental injuries (19,6 %), like in similar studies [15]. Al Arfaj et al [14] found combined 34.8% of previous crown fractures in direct contact sports (boxing, Kung Fu, Karate, Taekwondo, Roman wrestling, and mixed martial arts) and non – direct contact sports (football, volleyball, and swimming), which is somewhat higher incidence. Still, at direct contact sports authors [14] found less than 20 % of previous crown fractures which is similar to present study results.

Sepet et al [16] in a study of knowledge of sports participants about dental emergency procedures determined that 34,5% of participants would re-implant the avulsed tooth, 33,4% would maintain the avulsed tooth in handkerchief and 25,3% would maintain it in saline solution. Fifty percent of participants showed insufficient knowledge about tooth avulsion and its treatment (Figure 2). This findings along with previous studies results [16] demonstrate the need for systematic education of every participant in sporting activities, especially at combat sport.

CONCLUSIONS

Predominant type of dental injuries at combat sports are crown fractures. Many fighters are not familiar with possible tooth replantation after tooth avulsion, and are not familiar with optimal time of the replantation treatment. There is a need for systematic education of the combat sports participants, especially fighters.

REFERENCES

- [1] Ilia E, Metcalfe K, Heffernan M. Aust Dent J 2014; 4: 473-481.
- [2] Tiryaki M, Saygi G, Ozel Yildiz S, Yildirim Z, Erdemir U, Yucel T. J Sports Med Phys Fitness 2017. [Epub ahead of print].
- [3] Petrovic M, Kuhl S, Slaj M, Connert T, Filippi A. Swiss Dent J 2016; 7-8: 682-686.
- [4] Shirani G, Kalantar Motamedi MH, Ashuri A, Eshkevari PS. J Emerg Trauma Shock 2010; 4: 314-317.
- [5] Wikipedia [Internet]. Combat sport. [cited 2017 Mar 24]. Available from: https://en.wikipedia.org/wiki/Combat_sport.
- [6] Ifkovits T, Kuhl S, Connert T, Krastl G, Dagassan-Berndt D, Filippi A. Swiss Dent J 2015; 12: 1322-1335.
- [7] World Health Organization. Application of the International Classification of Diseases to Dentistry and Stomatology (ICD-DA). Geneva, 1978:88-89.
- [8] Brullmann D, Schulze RK, d'Hoedt B. Dtsch Arztebl Int 2010; 34-35: 565-570.
- [9] Correa MB, Schuch HS, Collares K, Torriani DD, Hallal PC, Demarco FF. J Appl Oral Sci 2010; 6: 572-576.
- [10] Leinhart J, Toldi J, Tennison M. Curr Sports Med Rep 2017; 1: 23-29.
- [11] Ferrari CH, Ferreria de Medeiros JM. Dent Traumatol 2002; 3: 144-147.
- [12] Holmes C. Br Dent J 2000; 9: 473-474.
- [13] Tiwari V, Saxena V, Tiwari U, Singh A, Jain M, Goud S. J Oral Sci 2014; 4: 239-243.
- [14] Al-Arfaj I, Al-Shammari A, Al-Subai T, Al-Absi G, AlJaffari M, Al-Kadi A, El Tantawi M, Al-Ansari A. Saudi Dent J 2016; 3: 136-141.
- [15] Nonoyama T, Shimazaki Y, Nakagaki H, Tsuge S. Int Dent J 2016; 6: 356-365.
- [16] Sepet E, Aren G, Dogan Onur O, Pinar Erdem A, Kuru S, Tolgay CG, Unal S. Dent Traumatol 2014; 5: 391-395