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AWARENESS ABOUT USE OF MOUTHGUARD AMONG BOXING PLAYERS IN PUNE CITY: AN OBSEVATIONAL STUDY

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ABSTRACT:

Dental and orofacial injuries were reported to be the most common form of traumatic injuries. Sports dentistry is the upcoming field in dentistry which is associated with the correct diagnosis, prevention and treatment of orofacial injuries and related oral diseases. Sports activities were found to be responsible for 13% of overall oral trauma. Numerous professional sport leagues are growing in India. Mouthguard reduces direct impact/force on dentition hence reduces risk of dental injuries while playing sports. Mouthguard reduces direct impact/force on dentition. Dentist can play important role in providing preventive dental health care for sportsperson. In this study, we discuss the relationship between athletes and dentistry, and the importance of educating athletes in prevention of injuries related to the sports.

KEYWORDS: Boxing players, Dental trauma, Mouthguard, Orofacial injuries, Sports dentistry.

INTRODUCTION:

Sports dentistry is the prevention of oral/facial athletic injuries and related oral diseases and manifestations. It has two major components: First is the treatment of orofacial injuries and the second is the prevention of sports-related orofacial injuries. To provide comprehensive care, a dentist must be knowledgeable and adept in the areas of oral surgery, endodontics, operative dentistry, orthodontics, hospital dentistry, and patient behaviour management1. Athletes, coaches, athletic directors, athletic trainers, parents, and members of the dental community should be aware of how individuals who participate in sporting activities are at risk for dental trauma.3 The common orofacial sports related injuries include soft tissue injury and hard tissue injury includes those to the teeth and facial bones, such as tooth intrusions, luxation, crown and/or root fractures, complete avulsions and dental-facial fractures. Sports dentistry had its origins in the 1980s 4 and for persons involved in contact sports, recognition of the injury prone dentition, and expert The vulnerable position of the maxillary jaw and teeth labels it as the prone site to sustain oromaxillofacial injury with crown fractures dominating the dental sports injury.5,6 Dental injuries are the most common type of orofacial injury sustained during participation in sports, Considering the increased popularity of contact sports and encouragement to participate at an early age, the role of the dental profession in relation to prevention of dental and other orofacial sporting injuries has become more important in view of this.2 Vigorous physical activities as well as competitive athletics offer sports men and women a variety of healthful benefits. However, participating in such activities also places athletes at risk for injury, including trauma to the teeth and mouth. Fortunately, most of these types of injuries can be prevented with the use of properly fitted protective athletic equipment. Preventive aspects during sports have changed the incidence of the injuries to the athlete. The preventive measures like usage of helmets, mouthguard have reduced the impact on the athlete, thereby reducing the injuries. Mouthguards are considered as the most effective and efficient method to prevent dental injuries.7 ,8 Modifications of these protective gears also have been studied and changes have been made to make them more comfortable, user-friendly, and also safer. Mouthguards offer protection by separating the cheeks and lips from the teeth, making users less susceptible to soft- tissue laceration and preventing opposing arches from traumatic contact. Need for study is to evaluate the awareness of sport person i.e. boxing players in Pune about use of mouthguard to preventing maxillofacial injuries and role of dentist in spreading awareness about mouth guards.

MATERIALS AND METHODS:

A questionnaire study was conducted among athletes from four different clubs. i.e. MIGS swargate saras bagh, Pune; Gold boxing sanas ground, Pune; Olympic champions nana peth, Pune; krantiveer lahuji ustad boxing club in Pune city to determine their awareness and knowledge about mouthguard and its role in reducing orofacial injuries. All subjects volunteered to participate in this study. All participants were assured that their information would remain confidential. Patients were informed about the details of the study and

consent was obtained from all. A brief introduction to the study was given to all the study participants. The closed ended questionnaire was designed to collect data which consists of 10 questions. Questions were asked orally to the athletes and their responses were collected on paper format. Parameters for sample size collection using G*power software version 3.192 were as follows; 80% power of study, alpha error 0.5, effect size 0.6 and degree of freedom 5. Calculated sample size was 144. Final considered Sample size was about 150 participants. The conventional sampling technique was used in the study. Study duration was about three months. First part included the demographic data of the study participants including age, gender, education, occupation. The second section included the questions related to the knowledge of the participants regarding the study, attitude-based questions, and practice-based questions. Percentage calculation was then carried out to interpret the data regarding their responses. Collected data were entered in a spreadsheet (Microsoft Excel 2016). The P value was set at 0.05. Statistical package for social sciences (SPSS) 23.0 version software (IBM) was used. Descriptive statistics (number and percentage) were used.

RESULTS:

In table 1, there were total of 150 athletes which participated in the study. The age group varied between 15- 30 years out of 150 athletes, 115 athletes male and there were 35 female athletes. In table 2, around 96.6% of athletes were aware about use of mouthgaurd and 3.33% were not aware of it. Around 10% of the uses mouthgaurd during practice session and 63.33% uses mouthgaurd only during competition and remaining 26.66% uses during both the practice and competition session. Around 65.66% athletes make use of readymade type of mouthguard and 23.33% are custom made and 20% uses standardized type of mouthguard. Around 78.66% boxing players benefitting using mouthguard and 21.33% not.

DISCUSSION:

This study reports the high prevalence of orofacial trauma in boxing players. The majority of players will experience orofacial trauma during their boxing time. Rate of dental injuries and complications is inversely proportional to the use of mouthgaurd. In many countries, one of the most common forms of recreation practiced is sports, which includes games, sports at professional level, and competitive level.9It has been widely reported that participation in sports carries a considerable risk of sustaining injury, moreover competitive contact sports were found to be more dangerous.[10] High prevalence of soft tissue injuries with suffering injuries requiring sutures .These findings confirm the high incidence of orofacial injuries associated with boxing, which is likely to be related to the high contact nature of the sport. Commonly occurring injuries include tooth fracture and luxation injuries. Teeth in the anterior region of maxillary arch were prone to injury. More injuries occurred during competition than training, which is likely to be due to the increased intensity and time playing full contact during games. The most common dental complications were loss of the tooth or the

need for extraction of the tooth, change in tooth colour, and a need for further treatment. This may be due to a lack of appropriate first aid or professional management, as over of players that suffered complications following orofacial injuries did not seek professional treatment. Vidovic et al conducted a study in which half of the interviewed coaches, i.e. 68 of 131 (52.7%) coaches, were familiar with the possibility of replantation of avulsed teeth.[11]

Dental injuries were more common and the complication rate was higher when a player was not wearing a mouthguard. The player-perceived risk of orofacial trauma indicates that the majority of players were aware that boxing is a high-risk sport. Despite this, 60% of players who were not wearing a mouthguard when they suffered an orofacial injury, now wear mouthguards; 26.66% in both training and competition. Use of mouthguard is totally dependent on the dental and orofacial trauma experience. It is unfortunate that a large number of players need to suffer an injury before they start wearing a mouthguard in this study, 10% of players wear mouthguards during practice session. It has been found that 63.33% of boxing players wore mouthguards but only 10% wore mouthguards during training. Usually contact sport person spends more time in practice session that competition still they prefer using mouthguards in competition that practice session. This shows the lack of player understanding the risk of injury during practice session, and the importance of mouthguard use in training and competition. Making mouthguard wear compulsory in both training and competition should be a focused. Readymade type mouthguards were the most commonly worn type of mouthguard. This is likely to be due to the reduced cost of readymade mouthguards compared to custom-made mouthguards and player's poor understanding of the advantages of custom-made mouthguards. Most mouthguard wearers liked their mouthguard. Difficulty in breathing and poor fitting were the most common complaints. More wearers of custom-made mouthguards liked their mouthguards than wearers of 'READYMADE' and stock mouthguards. Dentist make use of dental cast for the fabrication of the custom fabricated mouthguard. Custom-made mouthguards has better retention and adaptation hence do not interfere with breathing. Because of superior fit and comfort, they are more likely to be accepted by athletes.[12]

Custom-made mouthguards offer an individualized design according to the patient's oral anatomy and an even distribution of material Custom-made mouthguards should be recommended by dentists for better comfort, fit, stability and protection and more likely to be worn by the player. The most common source of advice for players with regard to the value of mouthguards in the prevention of orofacial trauma was coaches. Coaches and managers also played a role in advising mouthguard use and highlighting the importance of the benefits of mouthguard use. Utilizing the benefits of mouthguard should be the prime concern of the dentist for the athlete which are more prone to the orofacial trauma. Sports coaches and their awareness on first aid related to orofacial trauma play a vital role in prognosis. The sports dentist and the coaches of the concerning sports should be educated and be able to handle the sports related orofacial injury.[13]

Coaches not only bear the responsibility to educate the sports persons but also motivating them to use various protective measures such as mouth guards and shields. Studies related to sports dentistry have been reported that many coach and sports teachers are not able to imply any precautionary steps

on a regular basis.[14] Usage of mouthguard is totally determined by the attitudes of officials, coaches, parents, and players. Although parents and coaches are equally responsible for maintaining mouthguard use, perceived as the individuals with the greatest impact on whether or not players wear mouth guards.[15, 16] Despite known and acknowledged benefits mouthguard wear will not persuade some players to wear them. Limitations of this study are that it is concise to use of mouthguard among boxing and wrestling players only while mouthguards are used in many contact as well as noncontact sports like basketball, gymnastics. This was carried out among only graduates and undergraduates of age 18-30 years, athletes of age below 18 were not included.

RECOMMENDATIONS:

1. Players should ware properly fitted mouth-guards during both practice and competition to avoid orofacial injuries.
2. Dentist should make athletes aware of the benefits of mouthguards.

CONCLUSION:

Athletes suffered dental trauma, emphasizing the importance of mouthguard. Mandate the use of mouth guard to prevent sport related injuries. Athletes in Pune are aware of mouthguards, still many don't use it during competitions / practice. Requirement to encourage athletes for use of mouthguard is combined effort of dentist, coach and sport physician.

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TABLES:

Table1: Demographic details of study participants (N=150)

Sr No.	**Questions**	**Responses**	**Number(N)**	**Percentage (%)**	**Total (N) (%)**
1	Age(year)	15-30 years	150	100%	150(100%)
2	Gender	Male	115	76.66%	150(100%)
		Female	35	23.33%	
3	Education status	Under Graduate	95	63.33%	150(100%)
		Graduate	55	36.66%	
4	Occupation	Students	90	60%	150(100%)
		Employed	43	28.6%	
		Unemployed	17	11.33	

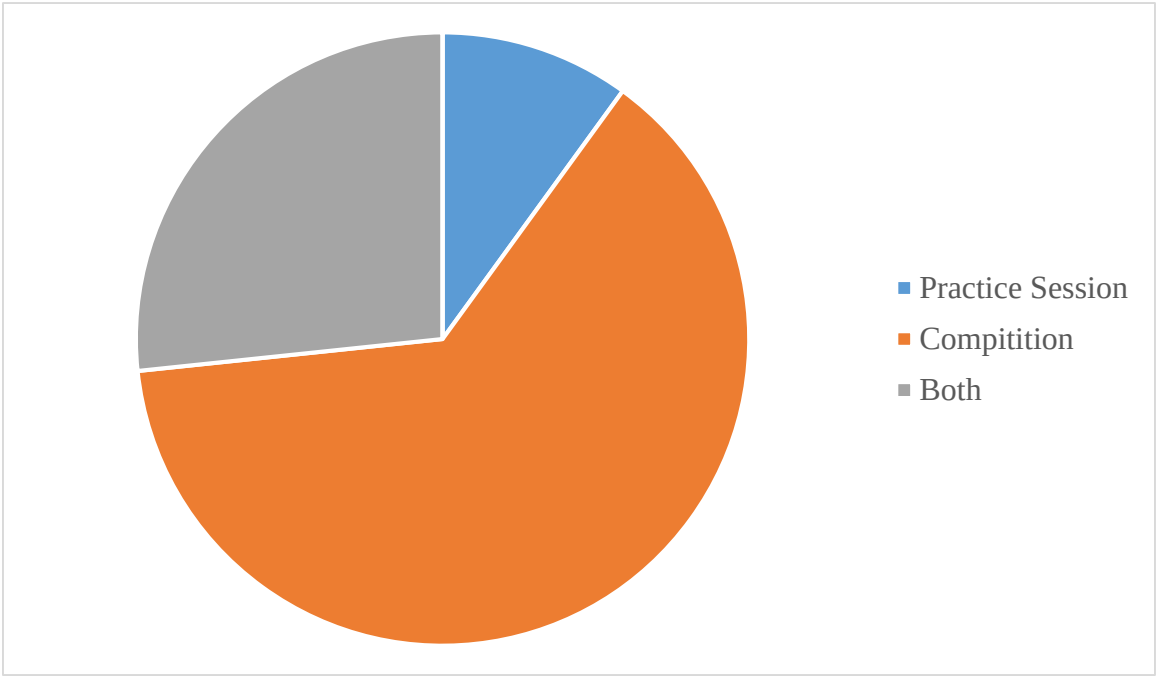
TABLE 2: Responses by athletes towards and mouthguard and its uses (N=150)

Sr No.	Questions	Responses	Number(N)	Percentage (%)	Total (N) (%)
1	Are you aware that you can use mouthguard during sports practice?	Yes	145	96.66 %	150(100%)
		No	5	3.335 %	
2	Are you aware that using mouthguard can prevent dental injuries?	Yes	140	93.33 %	150(100%)
		No	10	6.66 %	
3	From where did you come to know about mouthguard?	By Family	10	6.66 %	150(100%)
		By Coach	65	43.33 %	
		By Friends	10	6.66 %	
		By Dentist	20	13.33 %	
		By Media	45	30 %	
4	When do you use mouthguard?	Practice session	15	10 %	150(100%)
		Competition	95	63.33 %	
		Both	40	26.66 %	
5	Which type of mouth guard you use?	Ready made	85	65.66 %	150(100%)
		Custom made	35	23.33 %	
		Standardize	30	20 %	
6	Since how many years you are using mouthguard?	0-5 Years	90	60%	150(100%)
		5-10 Years	35	23.33%	
		10-15 Years	20	13.33%	
		15-20 Years	5	3.33%	
7	What is the duration of your mouth guard usage in a day?	1 hours	56	37.33 %	150(100%)
		2 hours	43	28.66 %	
		3 hours	31	20.66 %	

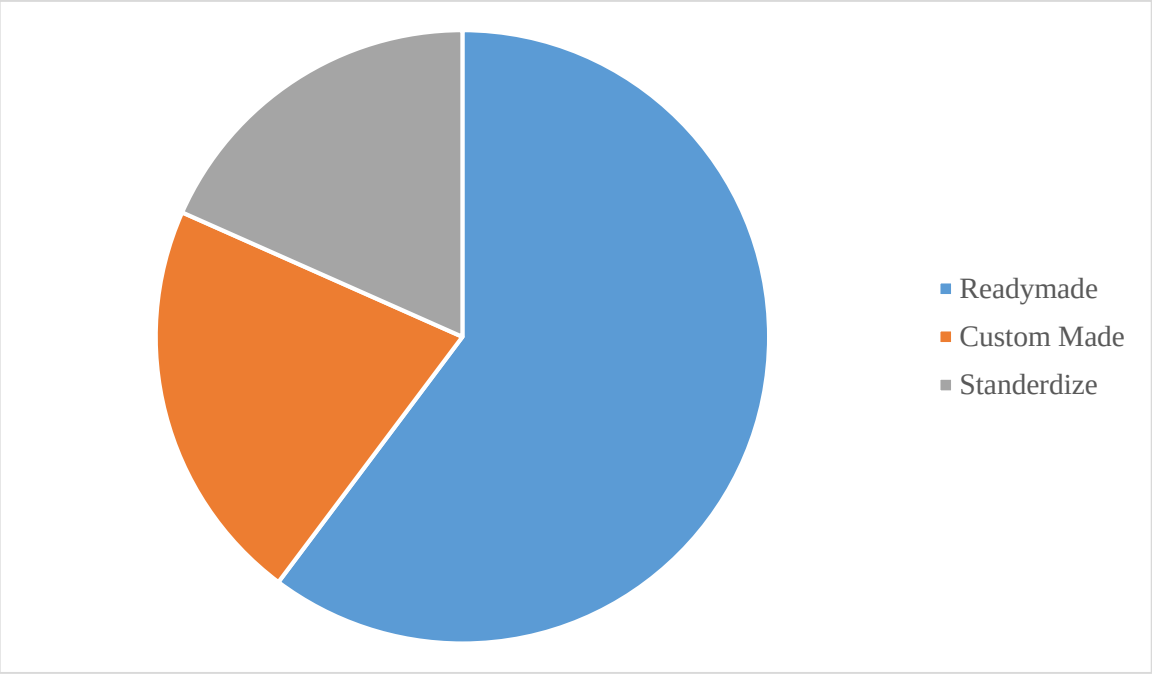
		4 hours	20	13.35	
8	Are you benefitting by using mouthguard?	YES	118	78.66 %	150(100%)
		NO	32	21.33 %	
9	Are you facing any difficulty while using mouthguard?	YES	37	24.66 %	150(100%)
		NO	113	75.33 %	
10	How do you clean your mouthguard?	Tap water	115	76.66 %	150(100%)
		Cleansing agents	35	23.33 %	

GRAPHS:

GRAPH 1: Use of mouthguard in which session (N= 150)



GRAPH 2: Types of mouthgaurd used (N=150)



GRAPH 3: Source of awareness for athletes (N=150)