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MOUTHGUARDS;
AWARENESS ABOUT MOUTHGUARDS IN DENTAL COMMUNITY OF LAHORE

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ABSTRACT… Introduction: Contemporary dentistry has shifted its paradigm from therapeutic to preventive. Dento-alveolar injuries are quiet frequently reported and sports remain as one of the major cause. In Pakistan contact sports like boxing, hockey, football etc are actively played at all levels. It is the need of the hour to prevent the dental and dento-alveolar injuries resulting from these. Literature suggests that mouthguard is the best option available. **Aims and Objectives:** The aim of this study was to assess the level of awareness about mouthguards in final year students, PG trainees, and faculty of University College of Dentistry and private dental practitioners of Lahore. Also the results shall be utilized to assess the need of awareness programmes that can be of help to the dentist and help serve the community. **Study Design:** cross-sectional descriptive study was carried out. **Setting:** Study was carried out in University College of Dentistry and private practitioners of Lahore. **Period:** Study was carried out over a period of 6 months. **Material and Methods:** 87% responded to questionnaire distributed from a sample of 200. **Results:** Results show that the students had the least knowledge (63%) whereas 100% of the assistant professors and above had knowledge of mouthguard. general dentists and the senior faculty was the one with higher percentages which recommended mouthguards 53% and 80% respectively. **Conclusion:** Results lead to the conclusion that there is a need to improve the competency level of the dentists regarding mouthguards, their benefits, fabrication etc. so they can educate the patients, promote the use if mouthguards and limit the incidence of injuries. Further research projects need to be funded to highlight the importance of mouthguards and their use should be encouraged.

Key words: Dento-alveolar Injuries, Contact Sports, Mouthguards.

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INTRODUCTION

Mouthguards are protective devices worn to prevent dento-alveolar injuries especially during contact sports.[1,2] Contact sport by definition refers to "sport in which players come in contact with each other in form of collision or with inanimate objects."[3,4] These include boxing, football, martial arts, rugby, hockey, basket ball etc. Most common contact sports played in Pakistan are boxing, hockey, basketball, football, kabbadi etc. They are played at every level ranging from schools to international.[5]

It is reported that the prevalence of dento-alveolar injuries due to contact sports in Pakistan is 15%.[6,7] Prevention is now the prime aim of dentistry.[8] With advancement of Olympics prevalence of contact sports and hence injuries from them has increased considerably. Ideal prevention of dental- alveolar injuries from contact sports can be achieved with use of mouthguards.[9,10] Academy for Sports Dentistry joined forces with the International Association of Dental Traumatology and they laid emphasis on use of mouthguards for contact sports.[11]

There are three types of mouthguards available i.e. stock, boil & bite and custom fitted mouthguards, based on their fabrication.[12] Most commonly available are stock mouthguards which are commercially available and cheaper.[13] However they might not fit properly and are least effective in prevention of trauma.[14]

Figure-1. Shows the different steps in the fabrication of multilayer custom made mouthguard

Boil and bite is the one in which pre-formed mouthguard is altered by placing in boiling water and then the patient bites on it. It is better than stock mouthguards.[15] The third and most efficient type of mouthguards is custom made mouthguards which are properly designed in dental laboratories according to patient's size.[16,17]

Custom mouthguards can be single layer or multi layer. Multi layer mouthguard is known to be more effective in prevention of concussion because an extra 4 mm thickness is given in the anterior region.[18] Materials used for mouthguards include ethylene vinyl acetate (EVA), polyvinylchloride, latex, acrylic and polyurethane etc. EVA is the most commonly used material.[19] The most common problems associated with mouthguards include slight respiratory distress and infection if it is contaminated. Others include allergies, bio-incompatibility etc.[20]

It is expected that there is least knowledge about mouthguards in general population but the question is whether the dental community has sufficient knowledge about mouthguards? This question laid the foundation of this study. Mouthguards are covered in dental undergraduate curriculum in the subject of Prosthodontics in Pakistan. The theory covers all aspects including mouthguards uses, types, fabrication etc. but practical demonstration is not performed during the undergraduate studies. It can be assumed that it is not a commonly prescribed preventive device in Pakistan. The aim of this study was to assess the awareness level of dental community regarding different aspects of mouthguard to help foster the public in prevention of dento- alveolar injuries.

MATERIALS AND METHODS

The study was conducted in university of Lahore dental hospital Lahore, Pakistan. The study population consisted of final year students, house surgeons, general dentists, post graduate trainees and faculty above the level of assistant professors. G* power software was used for calculating the sample size and it turned out to be 200.Data was collected using self administered questionnaire including questionnaires about contact sports, dento- alveolar injuries, role of mouthguards, its types, and fabrication techniques and whether they recommend it to the patients reporting to them. The data was analyzed by MS excel using frequency tables.

RESULTS

The descriptive statistics is shown in Table-I.

Age distribution	20-60 years
Mean age	22 years
Total sample	200
Students	30
House surgeons	51
Private dentists	65
PG trainees	18
Assistant professor and above	10

Table-I. Descriptive statistics

The questionnaire included basic questions about mouthguard uses, fabrication, indications etc. The first question asked was that if they had any theoretical knowledge about mouthguard and it turned out that students had the least knowledge (63%) whereas 100% of the assistant professors and above had knowledge of mouthguard as

shown in Figure-2. Figure-3 shows general dentists and the senior faculty was the one with higher percentages which recommended mouthguards 53% and 80% respectively. Most of the population had knowledge about one of the fabrication technique. Senior faculty had better knowledge. However when it came to the fabrication even of the senior faculty only 20% said they had fabricated it as clearly shown in Figure-4. Majority were of the view that they will like to recommend mouthguards in future.

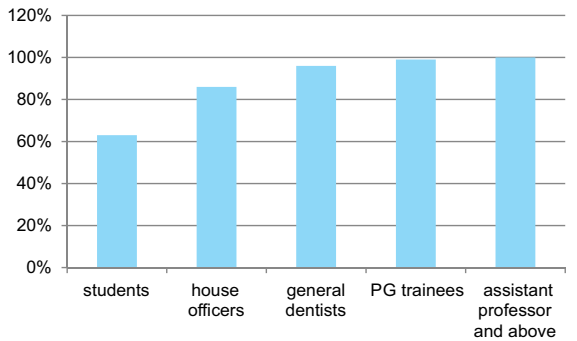

Figure-2. Showing the percentage of each category that has knowledge about mouthguard.

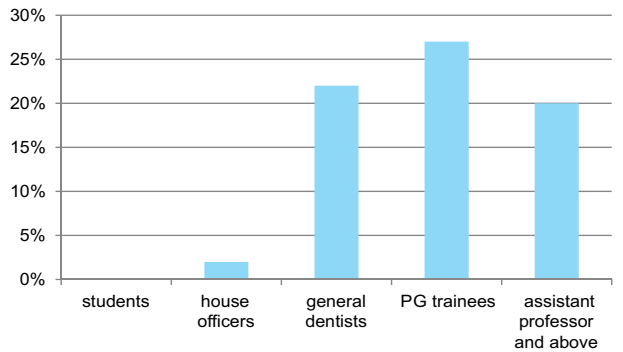

Figure-3. Percentage of each category that have ever fabricated mouthguard

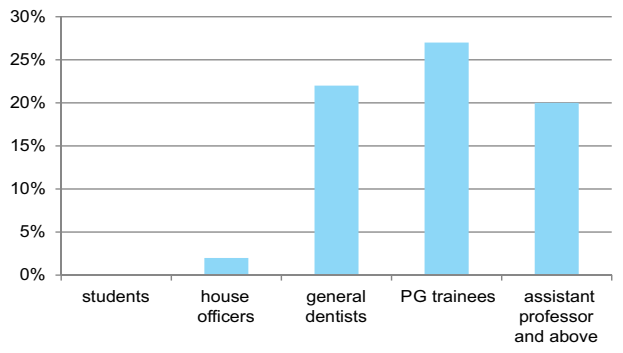

Figure-4. Percentage of each category that has recommended the mouthguard.

The results demonstrated that greater the work experience, higher the educational level and hence more knowledge about mouthguards. There is a strong positive correlation between work experience and educational level 0.75 and they both have direct relation with knowledge of mouthguard as well as with fabrication techniques (0.492). It was also seen that the knowledge of mouthguard had positive correlation with recommendation (0.115). Those who had awareness of mouthguards were the one who recommended mouthguards to their patients.

DISCUSSION

The famous proverb says “an ounce of prevention is better than a pound of cure”.[21] Mouthguard is the best prevention strategy from dento alveolar injuries as a result of participation in contact sports.[22,23] We should educate the public at the basic level about the uses of mouthguard and its role in prevention of injuries. All sectors should work in collaboration to make it effective preventive modality. Pakistan is a developing country and faces many challenges like poverty, illiteracy, terrorism, poor resources etc. less than 2% of the budget is spent on health and very little of it is utilized for primary healthcare provision that includes prevention of health deteriorating factors. A sport is a good means of maintaining physical fitness however it may lead to injuries as well. Contact sports are especially known to cause dento- alveolar injuries ranging from concussion to as severe as avulsion of teeth. It is not wise to avoid sports but rather prevention of dento-alveolar injuries should be emphasized. The most effective method is use of mouth guards.

The aim of our study was to evaluate that whether the dentists themselves are well aware of the mouthguards and its effectiveness. Only then they can help the public if they themselves have updated knowledge.

A study was carried out in Brazil which included 373 undergraduate students of physical education and they were questioned about mouthguards and its role in prevention of dental trauma. The results show that 89.81% of the students had knowledge about mouthguard however only

17.96% were promoting its use. Our study results are also comparable. Student's awareness was 63% and only 13% recommended mouthguards.[24] It was observed that the level of awareness is directly proportional to the education level. It is clearly evident that assistant professors and above have better awareness about each aspect of mouthguard and least awareness is observed in final year students. Final year students are mostly just aware of mouthguard use and one of its types. PG trainees and other faculty members are expected to gain more knowledge and explore the net and literature available so the results coincide with it. A study was carried out in India on sports teacher which suggests that 85.5% of the teachers had information of mouthguard but only 3% recommended it.[25] In our study the entire faculty was aware of use of mouthguard and 80% have recommended it. Also it was observed that the students and house surgeons did not have a chance to fabricate or even prescribe the mouthguard which suggests that it is not a part of their curriculum. General dentists however had the opportunity to either fabricate or prescribe the mouthguard but the number is not up to the mark. There was a positive response to recommendation of mouthguard in future by each category which is a little step towards our aim of improving primary health care in dental setup.

However there were some limitations of the study. We cannot completely eliminate the biasness. Many people do not correctly fill the questionnaire. It was difficult to involve private dentists in the study and with this small sample we cannot generalize the results.

CONCLUSION

It is evident that there is a lack of knowledge regarding an important prevention means, mouthguard. There is a need to conduct more studies on this topic and check the feasibility of mouthguards. Resources should be provided for facilitating the use of mouthguards. The measures needed in this regard include educating the dentists, educating the public, collaboration with sports organizations, highlighting the hurdles in its implementation etc.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Salman Ashraf Khan	Chose the topic, SUpervised the study.	
2	Mariam Fatima	Carried out the study, Whole the first up final draft after correction, deaft the questinnaire collected the data, analysed the resutls, interpreted the resutls.	
3	Muhammad Hassan	Supervision of study, helpedin in data analysis up review of data.	
4	Naima Khalid	Helped in collection of data up analysis.	
5	Ayesha Iqbal	Helped in collection of data.	
6	Anum Ahmed Raja	Helped in collection of data.	
7	Mohammad Annas	Helped in collection of data.