

Knowledge and Attitude of the Sports Teachers in Central India towards Oro-facial Injuries and the use of Mouth Guard

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Abstract

Objective: To evaluate the sports teachers' knowledge and attitude towards sports related oro-facial injuries and the use of mouth guards.

Methods: Certified sports teachers from various schools and colleges of Vidarbha region, Central India were exposed to pre-validated questionnaire containing both open ended and closed ended questions. Data obtained was analyzed and expressed as percentage.

Results: Total 197 sports teachers from 167 schools and colleges participated in the study. Approximately 67.5% of the sport teachers agreed that sports related oro-facial injuries are common and inline skating (58.4%) was the most common sport. Only 8.1% of the sport teachers were having knowledge regarding first aid to oro-facial injuries. All sport teachers agreed that sport related oro-facial injuries can be prevented, but only 10.1% incorporated protective measures in practice to prevent it. Majority of the sports teachers (85.8%) were aware that mouth guard is used as a protective device to prevent oro-facial injuries but only few recommended in their school. Lack of motivation by the school and college administration was the major reason (50%) for non-recommending. Inline skating (54.8%) was the highly recommended sports for mouth guards by sports teachers, followed by boxing and basketball. Only 29.9% of the sports teachers were aware that dentist are the appropriate specialist to approach for mouth guards.

Conclusion: The sports teachers had adequate knowledge regarding the sports related orofacial injuries and the protective devices used to prevent it, but their inappropriate attitude is the main hindrance in the prevention of orofacial injuries.

Keywords: Oro-facial injuries; Mouth guard; Sports teachers; Knowledge; Attitude

Introduction

Oro-facial injuries in children are common during various sports activities. The peak age groups with highest risk of trauma are 8-11 years [1,2]. Utmost care of dentition during this age group is must as the dentition is not fully formed which could affect the child's oro-facial growth, esthetic, psychology and parental economy. Several sports related oro-facial injuries can be life threatening in nature therefore it is mandatory to use protective device. Various basic protective devices such as helmets, face masks and mouth guards are used to reduce the risk of sport related oro-facial injuries. Studies have shown that regular use of mouth guards is of paramount importance in reducing the incidence of oro-facial injuries. In spite of having adequate information about its use there is minimal utilization which results in oro-facial injuries. This points out that more attention and motivation in addition to strict rules is required to reduce the incidence of sports related oro-facial injuries.

Parents have an important role to educate their children and keep a strict vigilance on them regarding use of sport related preventive measures. But their role is taken up by the sports teachers as the children move out from their home campus to school playground or sports academy. Hence it becomes essential to check the sports teachers' knowledge and attitude towards sports related injuries and regular practice of the preventive measures.

Hence a study was planned in Vidarbha region of Central India to evaluate the knowledge, attitude and practice of sports teachers towards oro-facial injuries and use of mouth guards.

Material and Methods

The study was undertaken among the sports teachers of various schools and colleges of Vidarbha region, Central India between June 2015 and December 2015. Only certified sports teacher were included

in the study. The written permission was obtained from schools and colleges regarding participation of sport teachers in the survey. The sports teachers were exposed to pre-validated questionnaire which was designed to assess their knowledge and attitude regarding oro-facial injuries and use of mouth guards. The pre-validated questionnaire was distributed by hand delivery system. It consisted of both open ended and closed ended questions. The data obtained was analyzed and expressed as percentage.

Result

A total number of 197 sports teachers from 167 schools and colleges were included in the study. Of these 197 sport teachers, 181(91.8%) were male and 16 (8.12%) were female. Majority of sports teacher were having more than 3 years of teaching experience as a sports teacher. The age of the sport teachers ranged from 22-40 years. Approximately 67.5% of the sport teacher agreed that sports related oro-facial injuries are common and it affects the esthetic and psychology (Table 1). Inline skating (58.4%) was considered the most common sport causing orofacial injuries particularly the laceration type (61.4%) and teeth fracture (25.9%) (Table 2). Only 8.1% of the sport teachers were having knowledge regarding first aid to oro-facial injuries (Table 1). All sport teachers agreed that sport related oro-facial injuries can be prevented

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Received April 07, 2016; Accepted May 02, 2016; Published May 09, 2016

Citation: Kalaskar AR, Kalaskar R (2016) Knowledge and Attitude of the Sports Teachers in Central India towards Oro-facial Injuries and the use of Mouth Guard. J Sports Med Doping Stud 6: 179. doi:[10.4172/2161-0673.1000179](https://doi.org/10.4172/2161-0673.1000179)

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Questions	Yes N (%)	No N (%)
1 Are sport related OFI common?	133 (67.5)	64 (32.5)
2 Does Sport related OFI affects esthetic & psychology?	130 (66.0)	67 (34.0)
3 Do you have knowledge of first aid to OFI?	16 (8.1)	181 (91.9)
4 Can sport related OFI be prevented?	100 (100)	0.0 (0.0)
5 Can avulsed tooth be replanted?	178 (90.4)	19 (9.6)
6 Are mouth guard used as a protective device to prevent OFI?	169 (85.8)	28 (14.2)
7 Do you recommend mouth guard in your school / institute?	6 (3)	191 (97)

OFI = Oro- facial injuries

Table 1: Response of sports teachers to various questions.

Name of sport	N (%)	Type of injury	N (%)
Inline Skating	115 (58.4)	Laceration	121 (61.4)
Basket ball	10 (5.0)	Teeth fracture	51 (25.9)
Football	28 (14.3)	Avulsion	18 (9.1)
Running	17 (8.6)	Any other	7 (3.6)
Cricket	4 (2.0)	Total	100 (100)
Boxing	23 (11.7)		
Total	100 (100)		

Table 2: Distribution of sports causing Oro- facial injuries and type of injury

(Table 1), but only 10.1% practice protective measures to prevent it (Table 3). Nearly 90% of the sports teachers were aware that avulsed tooth can be replanted (Table 1) but very few (5.5%) knew about the best storage medium (Table 4). Majority of the sports teachers (60.4) consider that saline/water is the best storage medium for avulsed tooth (Table 4). Approximately 85.5% of the sports teachers were aware that mouth guard is used as a protective device to prevent oro-facial injuries but only few (3%) recommended in their school (Table 1). Lack of motivation by the school and college administration was the major reason (50%) for non-recommending. Inline skating (54.8%) was the highly recommended sports for mouth guards by sports teachers, followed by boxing and basketball (Table 5). Only 29.9% of the sports teachers were aware that dentist are the appropriate specialist to approach for mouth guards (Table 6).

Discussion

Sports can be fun time or a moment of competition. But such fun or competitions can be marred by the unwanted injuries inflicted during sports activities. In India the reported prevalence of orofacial injuries ranges from 4-35% amongst the adolescents [3,4] as against the prevalence of 15-35% reported in other countries [5,6]. Out of this, the sports related injuries account for one of the major etiological factors (18.1%) for oro-facial injuries [7,8]. This observation indicates that there is some inadequacy in the implementation of protective measures to prevent sports related orofacial injuries. Helmet, face mask and mouth guard are the protective devices used to protect sport related orofacial injuries. Of all the protective measures, mouth guards have a major role in reducing the sports related oro-facial injuries [9]. Studies conducted in Hawaiian [10], Australia [11] and America population have shown reduced oro-facial injuries with the use of mouth guards [12]. Mouth guards an intraoral appliance act as a buffer between oral soft tissue and teeth thus preventing soft tissue and dental injuries [13-15]. Several countries have made the use of mouth guards mandatory during contact and non-contact sports [16]. But in India no such rules are there mandating the use of mouth guard in sports. This might be one of the reasons for ignorance towards strict follow-up of use of protective devices and increased prevalence of sports related oro-facial injuries.

Preventive measures	N (%)
Helmet	5 (2.5)
Chin cap	2 (1.0)
Mouth guard	6 (3.0)
Other	7 (3.6)
No measures	177 (89.9)

Table 3: Measure taken to prevent OFI by sports teachers.

Storage medium	N (%)
Milk	11 (5.5)
Saline/water	119 (60.4)
Oral cavity	7 (3.6)
Dry	41 (20.8)
Don't know	19 (9.7)
Total	197 (100)

Table 4: Knowledge about best storage media.

Name of sports	N (%)
Inline Skating	108 (54.8)
Basket ball	12 (6.1)
Football	00 (0.0)
Running	6 (3.0)
Cricket	00 (0.0)
Boxing	71(36.1)
Total	197 (100)

Table 5: Highly recommended sports for mouth guards by school teachers.

Name of specialist	N (%)
Dentist	59 (29.9)
Physiotherapist	112 (56.9)
Pharmacist	1 (0.5)
Physician	4 (2.0)
Others	21 (10.7)
Total	197 (100)

Table 6: Distribution of appropriate specialist for mouth guard preparation.

Sports teachers have not only the responsibility of educating the sports persons about protective devices but also help them in motivating for its regular use. Studies have shown that although the sports teachers have adequate knowledge of protective devices, few imply it in their regular practice [17,18]. Similar results have been observed by the present study, wherein only 3% of the sports teachers recommended the use of mouth guards. Interestingly majority said that the reason for non- recommendation was the lack of motivation by the school and college administration. This might be attributed to financial constraints or their inappropriate attitude. Other reasons were, lack of knowledge regarding availability of the appliance or non-compliance of the students either due to decreased efficiency in the sports due to mouth guard use, poor esthetics or ignorance. Negligence on the side of teachers could also be a possible reason for non-recommendation.

Risk of orofacial injuries is influenced by the type of sports. Contact sports and sports involving collision have been associated with higher risk of orofacial injuries. Studies done in Chandigadh [17] and Bangalore [19] have reported boxing with the highest risk of orofacial injuries. In the present study inline skating was reported to have the highest risk of orofacial injuries followed by football (14.3%) and boxing (11.7%). This observation is in accordance with the studies conducted in Switzerland and Germany [20]. The possible reason for increased risk of orofacial injuries in inline skating might be due to the fact that this sport is associated with high speed and an imbalance at any time could lead to injuries. Also it is not obligated like other sports (boxing, hockey)

to wear mouth guard especially at amateur level. Therefore a serious consideration is required in this aspect as in central parts of India inline skating is becoming one of the popular sports and is practiced by many people of different age groups. Therefore educating sports persons for the use of mouth guards in this particular sport is the need of hour. Similar views were expressed by the sports teachers of the present study, majority of whom recommended skating as the sport highly requiring mouth guard use.

Soft tissue lacerations, abrasions, tooth intrusions, avulsions and crown-root fractures are the most commonly reported orofacial injuries whereas zygoma, mandibular and alveolar fractures are less commonly observed [8,21]. This data is in accordance with the data reported in the current study.

Sports are such activities which can any time be associated with emergency requiring first aid. In the present study 91% of the teachers were unaware of the first aid provided after orofacial injuries. Similar observations were also reported in studies conducted in developing countries like Saudi [22] and Morocco [23]. Lack of knowledge of first aid among the sports teachers is a matter of great concern. Basic knowledge of first aid helps in preventing major loss or permanent damage to orofacial structures which otherwise would contribute to unesthetics and related psychological changes in children. This fact was accepted by majority (66%) of the sports teacher in the current study. Therefore basic training of the first aid should be given to all sports teachers which could be a part of their curriculum or consultation from a dentist.

Avulsed tooth has to be replanted as early as possible. To preserve the vitality of periodontal ligament cells of the avulsed tooth, Hanks balanced salt solution is the most recommended storage medium. Other preferred storage media are coconut water, milk white egg and ORS [24]. A review study conducted by Emerich et al. [25] reported similar observations and proposed 'Save-a-Tooth boxes' containing an isotonic transport medium, which can maintain the viability of an avulsed tooth for up to 72 hours. In the present study 90.4% sports teachers agreed that avulsed tooth can be replanted and according to majority (60.4%) saline or water should be used as the storage media for the avulsed tooth. This indicates inadequate knowledge regarding the storage medium used. Although sports teacher had inadequate knowledge about the first aid and storage medium, they were aware that the tooth can be re-implanted. This difference in the knowledge could be attributed to the different factors such as; previous experience regarding treatment of avulsed tooth or information from media which might be in the form of newspaper or interviews of specialists.

Dentists are the appropriate specialist to fabricate mouthguard and to educate sports person, sports teachers and parents regarding the regular use of mouthguard. But surprisingly the specialists recommended by most of the sports teachers (56.9%) were the physiotherapists. The possible explanation for this observation could be the lack of knowledge, motivation, negligence on the part of sports teachers and unavailability of mouth guard in this region.

Sports teachers play an important role in educating, instructing and motivating the sports persons about the precautions taken during the sports activities. Also they are the ones to make the school or college managements understand the need of protective devises. Hence evaluating and updating their knowledge is essential to decrease the incidence of orofacial injuries. The present study reflects inappropriate attitude of sports teachers towards orofacial injuries. There is an urgent need to educate sports teacher, children and parents regarding traumatic dental injuries and its associated complication including psychological

trauma. Educational tools such as educational programmes, posters or pamphlets can be used to educate the society. Secondly a dentist should be appointed at every sports institution; who will not only take prophylactic care but will also provide therapeutic care.

Secondly mouth guard should be made mandatory in sports activities in India. This act will definitely change the attitude of the parents, sports persons and sports teachers towards appropriate use of protective devises, which will help in reducing the incidence of sport related orofacial injuries.

Conclusion

The present study showed that although sports teachers had adequate knowledge regarding the sports related orofacial injuries and the protective devises used to prevent it, very few teachers recommended it. This inappropriate attitude on their part is the main hindrance in the prevention of orofacial injuries. Mandating the use of mouth guard for sports activities and periodic motivation in various forms could be of immense help to reduce the occurrence of orofacial injuries.

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