

## Knowledge, attitude, and practices regarding oro-facial injuries and oro-facial protective devices among physical instructors in Bangalore

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### Abstract:

**Background:** Sports specific dental injuries are seen to occur frequently among children and young athletes. Dental injury is a distressing event often causing psychological as well as physical problems. The risk of children getting dental injuries during sports activities can be minimized by using a mouth guard and other oro-facial protective devices. The aim of this study is to determine the knowledge, attitude and practices of physical instructors in Bangalore, regarding oro-facial injuries and oro-facial protective devices.

**Material & Methods:** A self-completion questionnaire was sent to 50 physical instructors of schools, sports academies and gymnasiums situated in the South of Bangalore city. The questionnaire sought information about the knowledge of the incidence of oro-facial injuries, common sports causing oro-facial injuries and oro-facial protective devices and their role in the prevention of injuries. The data was subjected to statistical analysis.

**Results:** The population under study comprised of 92 males and 8 females. About 38% of oro-facial injuries were reported by physical instructors in the previous year. Physical instructors had knowledge regarding oro-facial protective devices like mouth guards (54%) and helmet (40%). The attitude and practice regarding the usage of mouth guards was found to be minimal.

**Conclusion:** The physical instructors had knowledge especially through the media on the protective effectiveness of mouth guards in reducing the oro facial injuries. Despite their awareness, only 4% of them recommended the mandatory use of the mouth guards. Majority of them could not recommend its

usage as they were unaware of its availability and the reason for not using the mouth is its improper fitting.

**Key Words:** Oro-facial injuries, oro-facial protective devices, physical instructors

### Introduction

Recreational and competitive sports activities are necessary for both physical and psychological well-being. Injuries to the oro-facial region are common during various sporting activities.<sup>1</sup> It is known that majority of dental injuries is seen in children between ages of 8 and 11 years which accounts for 19.2% to 36% of all injuries.<sup>2</sup> Consequences of oro-facial trauma for children and their families include psychological effects and economic implications. Prevention of these oro-facial injuries is a very essential step because the patient does not have to suffer from accompanying pain, disfigurement and mental agony. The benefits of wearing mouth guards during contact sports is of paramount importance.<sup>3</sup>

Protective devices help to reduce the likelihood of oral trauma, concussions, cerebral hemorrhage, loss of consciousness and also death due to a number of mechanisms. However, a high rate of dental trauma and minimal utilization of mouth guards has been reported in athletes, in spite of having adequate information about its usage.<sup>4</sup>

Awareness and practices of school teachers, sports officials, parents and players towards protective devices influence the usage of these protective devices. There is a paucity of information in literature regarding awareness of physical instructors on orofacial protective devices.

Hence, the aim of this study was to evaluate the knowledge, attitude and practices of physical instructors regarding the incidence of oro-facial injuries and the usage of protective devices.

### Materials and Methods

Subjects for the study comprised of physical instructors from various schools, sports academies and gymnasiums situated in the South of Bangalore. In order to assess

knowledge, attitude and practices, a questionnaire type proforma (Appendix 1) consisting of both open ended and close ended questions was distributed among them. Anonymity of the participants was maintained. The questionnaire was designed to obtain information on games or activities causing dental injuries including tooth avulsion, storage media and the importance of mouth guards in the prevention of oro-facial injuries. Of the 85 questionnaires that were distributed, only 50 were complete. Data obtained was analysed and expressed as a percentage.

years. A large number of them were employed as physical instructors in schools (68%), where as 28% and 4% of them were from the sport academies and gymnasiums respectively. Thirty eight percent reported incidence of oro-facial injuries in the recent one year and boxing was cited as the most common sport causing oro-facial injuries. (Figure 1)

Nearly fifty percent of the physical instructors were aware about the possibility of replacing an avulsed tooth and thirty four percent of them knew about the storage media for the same. (Figure 2)

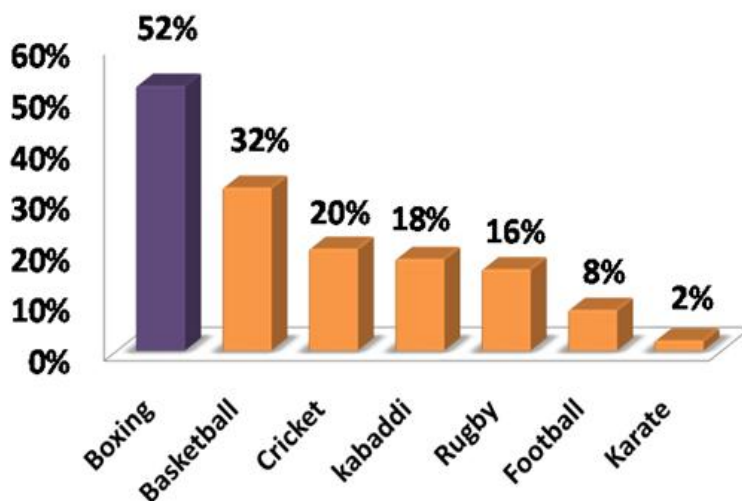


Figure 1: Sports causing oro-facial injuries.

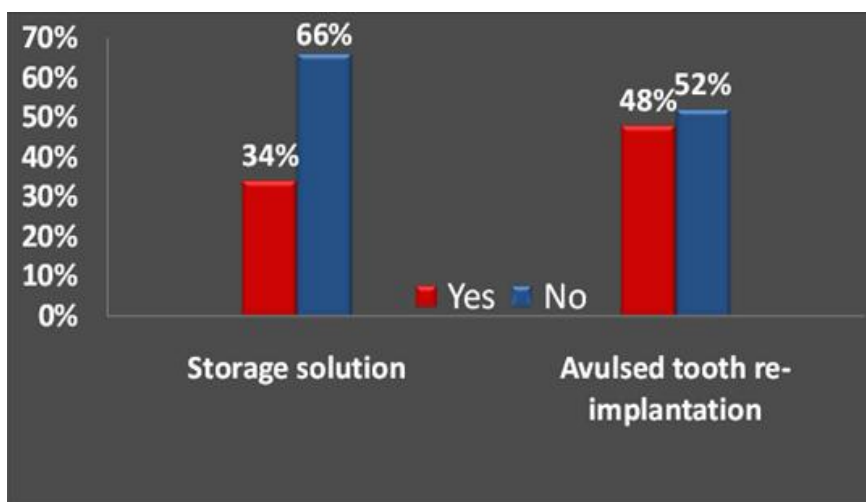


Figure 2: Knowledge about avulsed tooth re-implantation and storage media.

**Results**

The majority of physical instructors were males (92%) and 68% of the participants were aged between 21 and 30

Fifty eight percent of them had interacted with dental experts during their own training period. With regard to oro-facial protective devices, the most commonly known

device was mouth guards, as stated by 54% of physical instructors followed by helmet stated by 40% of physical instructors and chin shield (6%) stated by physical instructors. Mouth guards were thought to offer maximum protection to teeth and jaws. (Figure 3)

Despite their awareness about mouth guards, majority of the physical instructors did not recommend mouth guards to their students due to various reasons and 40% of them were not aware about its availability. (Figure 4)

The mouth guard is a resilient appliance placed in the mouth to reduce injuries, particularly to the teeth and surrounding structures. Mouth guards distribute the impact of a “blow” evenly throughout the mouth, lessening the chances of injury and generally made from Ethylene Vinyl Acetate (EVA). The use of mouth guards are highly recommended as it is non-toxic, has minimal moisture absorption, elastic and because of the ease of manufacture.<sup>5</sup> The Academy for Sports Dentistry (ASD) “recommends

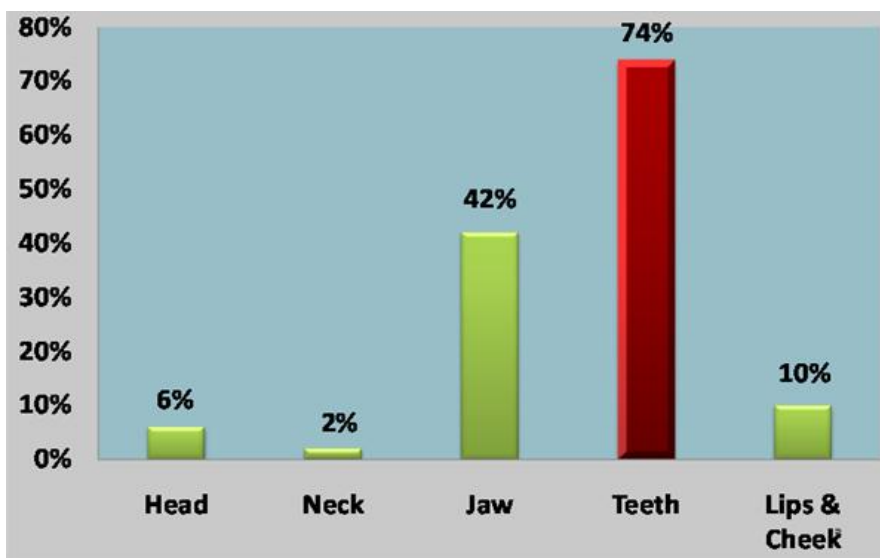


Figure 3: Knowledge about the protective role of mouth guards in prevention of oro facial injuries.

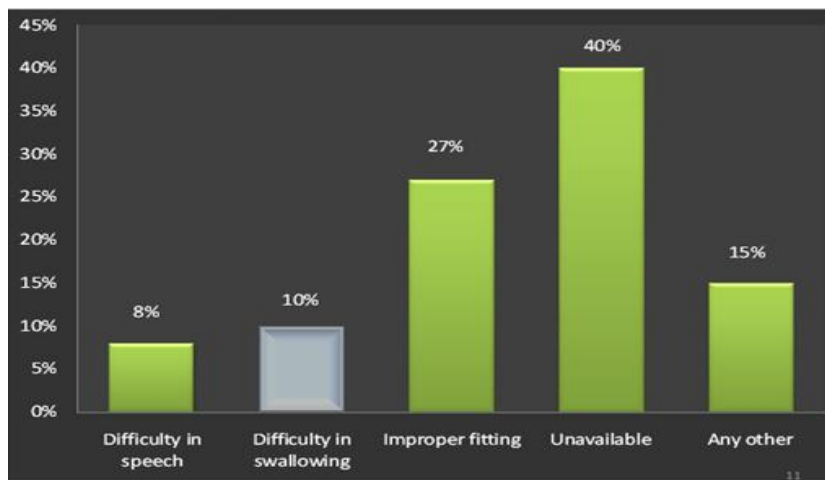


Figure 4: Reasons for not using mouth guards.

**Discussion**

The importance of using mouth guards during sports has been widely recognized. Injuries, including dental and soft tissue injuries, jaw fractures, concussions and neck injuries, have been drastically reduced by the use of these protective devices.

the use of custom fabricated mouth guard made over a dental cast and delivered under the supervision of a dentist. The ASD strongly supports and encourages a mandate for use of a properly fitted mouth guard in all collision and contact sports.<sup>6</sup>

Physical instructors have an opportunity to interact with athletes, players and school children. In developing

countries like India not much importance is given for protection against oro-facial injuries in the sports arena. The attitudes of physical instructors, parents, and players about wearing mouth guards influence their usage. Therefore, the focus of our study was to evaluate the knowledge, attitude, and practices of physical instructors.

In children, 10 to 39 percent of the dental injuries were related to accidents occurring during participation in various sports activities. The injury rates vary depending on the ages of the participants and the specific sport involved. The healthcare provider should implement preventive measures to individuals who take part in different kind of sports and recreational activities and are at a risk of oro-facial injuries.

Boxing was considered to be the main cause of oro-facial injuries, which is in accordance with the earlier Indian study.<sup>7</sup> Ironically kabadi and karate which are also a kind of contact sports were not considered to be a common cause for dental injuries. In spite of cricket being a very popular Indian sport only 10 respondents thought it to be a cause for oro facial injuries. This is a matter of concern, as the game is played very often at schools and playgrounds without adequate protection for the players. Although all the physical instructors were aware of the protection offered by mouth guards to the head and oro-facial region, only 2 of them recommended their usage. This was due to their lack of knowledge on the availability of these devices. The main source of their information was only the media. Also, in our country, there are no regulations that strictly enforce the usage of oro-facial protective devices in schools and gymnasiums.

It is interesting to know that many physical instructors were aware about the possibility of replacing an avulsed tooth following injury and the storage media for the same. This could have been due to the interaction some of them had with dental experts during their training period.

As 70% of physical instructors were willing to gain more knowledge about mouth guards, it is necessary for health professionals particularly pediatric and general dentists, in association with sports organizations to educate physical instructors on the availability and the types of mouth guards and promote its use widely.

### **Conclusion**

The majority of physical instructors were aware about the incidence of oro-facial injuries and oro-facial protective devices. They also agreed on the protective effectiveness of

mouth guards against sports related oro-facial injuries. They lack information about professionally fitted mouth guards and the source of its availability. These findings suggest that knowledge alone, on the use of mouth guard, does not ensure its practical utilization. The present study also suggests the need for educating the physical instructors, as they would like to have adequate information on mouth guards. Physical instructors should be made aware that the cost of the mouth guard and the inconvenience of wearing one are less significant as compared to the benefits of wearing it.

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**Appendix-1**  
**Questionnaire**

1. Do sporting activities supervised by you cause injuries to head, oro-facial structures or teeth (dental trauma)?
  1. Yes
  2. No
2. The three games most likely to cause injuries to head, face or teeth are
  - a)
  - b)
  - c)
3. The Common reason for the injuries are
  - a) Fall during sports
  - b) Collision
  - c) Hit by a hard object
  - d) Cycling
4. How often have students/ athletes under your care sustained an oro-facial or dental injury in the last one year?
  - a) None
  - b) 1-5
  - c) 6 or more
5. Can a tooth lost during sporting activities be replaced?
  - a) Yes
  - b) No
6. Are you aware about the storage solution for a lost tooth?
  - a) Yes
  - b) No
7. Do you instruct players to take out removable appliances from the mouth prior to playing sports?
  - a) Yes
  - b) No
8. Were sports injuries and their prevention a part of your syllabus during the degree/diploma in physical education?
  - a) Yes
  - b) No
9. Have you ever interacted with medical or dental experts regarding safety measures in sports?
  - a) Yes
  - b) No
10. If yes, where did this interaction occur?
  - a) Casually
  - b) At seminars
  - c) During sports career
  - d) Any other
11. Name 3 oro-facial protective devices used in sports?
  - a)
  - b)
  - c)
12. In which sports are these protective devices mandatory?
  - a)
  - b)
  - c)
13. In which sports are these protective devices mandatory?
  - a) Yes
  - b) No
14. If Yes, Where did you get the information from?
  - a) Friends
  - b) Magazines
  - c) Media (Television, Internet, Radio)
  - d) Any other
15. Mouth guards are available in
  - a) Pharmacy
  - b) Sports goods shop
  - c) Dentist
  - d) Clothing store
16. Are you aware that mouth guards can prevent injuries?
  - a) Yes
  - b) No

17. Mouth guards offer protection to
- Head
  - Neck
  - Jaws
  - Teeth
  - Lips and cheek
  - Ears
  - Eyes
  - All of the above
18. How often do you notice dental injuries due to not wearing a mouth guard?
- Always
  - Sometimes
  - Never
19. Do any of your students use mouth guard?
- Yes
  - No
20. Sports persons do not like to wear it because
- Difficulty in talking/speech
  - Difficulty in swallowing
  - Improper fitting (Retention)
  - Unavailable
  - Any other
21. Can the use of mouth guards influence an athletes' performance?
- Yes
  - No
22. Would you like to have more information about different types of mouth guards?
- Yes
  - No