UNIVERSITI TEKNOLOGI MARA

SPORTS-RELATED DENTAL INJURIES, ORAL HEALTH STATUS, AND ACCEPTABILITY OF CUSTOM-MADE MOUTHGUARD AMONG MALAYSIA CONTACT SPORTS ATHLETES

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ABSTRACT

Ready-made mouthguards are widely used by athletes because they are readily available and cheap. However, a ready-made mouthguard does not provide the optimal protection and comfort as a custom-made mouthguard. Therefore, in this study, we explore the acceptability of a custom-made mouthguard among Malaysian contact sports athletes. This is a cross-sectional study of Malaysian athletes targeted from the sports of rugby, silat and field hockey. They were randomly recruited and divided into two groups that received either a conventional mouthguard or a CAD-CAM mouthguard. The study included four components, namely self-reported dental injury questionnaire, intraoral examination, visual analogue scale (VAS) along with oral health impact profile (OHIP-14) and measurement of mouthguard's thickness. Independent t-test was used to evaluate and compare between gender, type of prescribed mouthguards and ANOVA was used to compare between the type of sports. Paired t-test was used to compare before and after the prescription of mouthguard. A total of 95 athletes (56.8% male, 43.2% female) participated in the survey. 47.4% (N=45) are field hockey athletes, 33.7% (N=32) from rugby and 18.9% (N=18) from silat. The experience of self-reported dental injuries was 49.5% (N=47) and the most commonly reported injuries were 35.8% (N=34) laceration to the lip, 24.2% (N=23) bruised to the face followed by 20% (N=19) cheek laceration. Most athletes 95.8% (N=91) are aware that mouthguard can prevent injuries, but only 60.0% (N=57) wear or own a mouthguard. The most common reasons for not wearing mouthguard were general discomfort 25.3% (n=24), 22.1% (N=21) salivation and 17.9% (N=17) reported that speech was affected. On intraoral examination revealed, 49.5% (N=47) had decay, 23.2% (N=22) had missing teeth and 46.3% (N=44) had dental restorations. Only 11.5% (N=5) injuries were observed during intraoral examination. It is also shown that missing and DMFT influence the OHIP-14 score among athletes. ($p<0.05$). Custom-made mouthguards are shown better VAS and OHIP-14 scores. When comparing the previous experience of mouthguards and newly prescribed custom- made mouthguards, VAS showed a significant improvement as seen in breathing, communication capacity, salivation, bad breath, gingival pain, tooth pain, TMJ pain, comfort, adaptation, flexibility, softness, and level of protection felt by these athletes ($p<0.05$). It is observed there is no significant difference in OHIP-14 after 1 hour and post 3-months delivery ($p>0.05$). After 3 months, there is a change of thickness in both conventional and CAD-CAM mouthguards, however, does not affect the VAS and OHIP-14 scores. ($p>0.05$). From the self-reported question, although mouthguard can prevent injury, not all athletes in this study use them. A custom-made mouthguard is more accepted by the Malaysia contact sport athletes as there are significant improvements and benefits when compared to previous experiences of wearing the ready-made mouthguards or not wearing a mouthguard. Therefore, education of the athletes and prescription on the usage of custom-made mouthguard is deemed necessary.

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