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Oral Hygiene Status and Periodontal Status (PSR) in Young Football Players from 12 to 17 Years Old in Plovdiv, Bulgaria

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Abstract: ***Introduction: The optimal level of oral hygiene is crucial for good oral health. Neglect of personal oral hygiene procedures can be a risk factor for developing caries lesions and periodontal diseases. Increased accumulation of dental plaque and calculus are indicators for poor oral health. Young football players are referred as a risk group and their oral health status must be regularly monitored. Aim: The aim of this research is to evaluate the oral hygiene status and periodontal PSR system in young football players. Materials and method: Assessment of OHI-S, calculus index (Green Vermillion) and PSR system was conducted. In the research are included children from 12 to 17 years, divided into 6 age groups, 40 in each group.Results: Results show thatthis group doesn't have adequate oral hygiene, even though their deposits of calculus are low. The plaque index shows high scores, bleeding from the gingival tissues is seen in many of the participants which is a result of inflammation due to bad oral hygiene.***

Keywords: oral hygiene, periodontal status, children, sport

1. Introduction

Oral health is an important element of overallhealth, well-being and quality of life.[1]Affected oral health can have negative impact in sport performance[6].Optimal level of oral hygiene is crucial for good oral health. Neglect of personal hygiene procedures can be a factor for developing caries lesions and periodontal problems. The effect of the biofilm in the developing of caries lesions is well known. Considering the incomplete mineralization after the eruption, biofilm has a crucial role. This is very important for the occlusal surfaces in newly erupted teeth, which are also difficult to be cleaned. With the help of OHI–S index we can get clear image of their oral hygiene habits.Increased accumulation of plaque and deposits of calculus are indicators for poor oral health. A research of oral health in young football players can predict whether they are at risk because poor oral health is seen in many risk groups including young football players[5].Therefore our aim is to determine the oral hygiene status in this population and to investigate the PSR system to determine their treatment needs.

2. Materials and Methods

The research is including participants from 12 to 17 years old. All of them are attending the youth professional football school. They are divided into 6 age groups, 40 in each age group. The study was conducted in the training centre of one professional football club in Plovdiv, Bulgaria.We have examined the OHI-S and Calculus index (Green Vermilion) and PSR index.

Criteria for classifying debris

1) No debris or station present
2) Soft debris covering not more than one third of the tooth surface, or presence of extrinsic stains without other debris regardless of surfacearea covered
3) Soft debris covering more than one third, but not more than two thirds, of the exposed tooth surface.
4) Soft debris covering more than two thirds of the exposed tooth surface

Criteriaforclassifyingcalculus

1) No calculus present
2) Supragingivalcalculuscoveringnotmorethanthirdoftheexposedtoothsurface.
3) Supragingival calculus covering more than one third but not more than two thirds of the exposed tooth surface or the presence of individual flecks of subgingival calculus around the cervical portion of the tooth or both.
4) Supragingival calculus covering more than two third of the exposed tooth surface or a continuos heavy band of subgingival calculus around the cervical portion of the tooth or both.

PSR

- Color-coded reference mark is completely visible in the deepest sulcus or pocket of the sextant
- No calculus or defective margins on restorations are present.
- Gingival tissues are healthy with no bleeding evident on gentle probing.

1) Color-coded reference mark is completely visible in the deepest sulcus or pocket of the sextant.
- No calculus or defective margins on restorations are present.
- Bleeding IS present on probing.

2) Color-coded reference mark is completely visible in the deepest sulcus or pocket of the sextant. Supragingival or subgingival calculus and/or defective margins are detecte
3) Color-coded reference mark is partially visible in the deepest sulcus or pocket of the sextant. This code indicates a probing depth between 3.5 and 5.5 mm.
4) Color-coded reference mark is not visible in the deepest sulcus or pocket in the sextant. This code indicates a probing depth of greater than 5.5 mm.

Code * The * symbol is added to the code of a sextant exhibiting any of the following abnormalities: furcation involvement, mobility, mucogingival problems, recession extending into the colored area of the probe.

3. Results

Our results show that the biggest percentage (41.75%) is seen in the first level 0-1. In the second score the percentage is 37.80% and in the third level 20.45%. In general 58.25% of all children have inappropriate oral hygiene. The level of oral hygiene is mostly defined by the personals attitude towards oral hygiene, and it can hardly be correlated with other factors, this means that every child decides how to provide its own oral hygiene procedures.

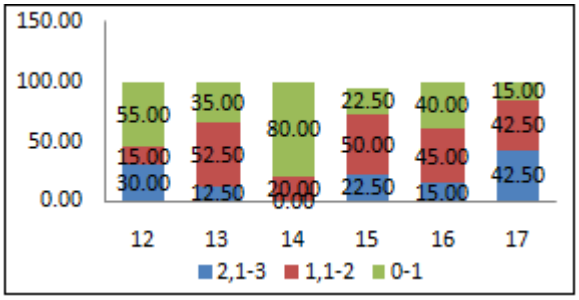

Figure 1: Relative shares of children with different levels of OHI-S index

Gay Escodaet all[3],conduct a research about the oral health in professional footballers. In this study authors use Quigley-Hein index, and the mean value is 2.3. To compare their result with ours we found it hard, because we used Green Vermilion index and our mean value is 1.298. Difficulties occur because of the different level and criteria in the two indexes Green Vermilion 0-3 Quigley-Hein 0-5. But in any case, we can say that the second score of Quigley-Hein index. Is almost concurrent with the first criteria inGreen Vermilion index. We can say that our result are equivalent with those reported in the study of Gay Escoda. But to get more real image, it is better to make a comparison with children which don't participate in sport activities like our population. For this reason, The study of Kondeva V.[4]conducted in 2005-2006 seemed proper. They examined 1583 children between 7 and 17 years old. Their results show that 21.00% of all children have score under 1.0. Those who have low level of oral hygiene are 48.00% and 31% have very low level of oral hygiene. Between our results and those from the authors there is difference, Kondeva discovered that 79% (48%+31%) of all children have low and very low oral hygiene, our findings show that 58.25% are also with low and very low oral hygiene. We can say that even the fact that our percentage is lower then the others and the fact that Kondeva conducted the research before ten years, the percentages are still high and in general the level of personal oral hygiene is not adequate.

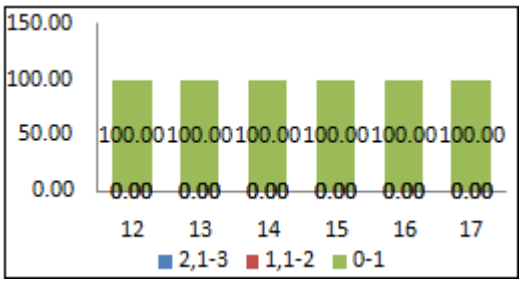

Figure 2: Relative shares of children with different levels of calculus index

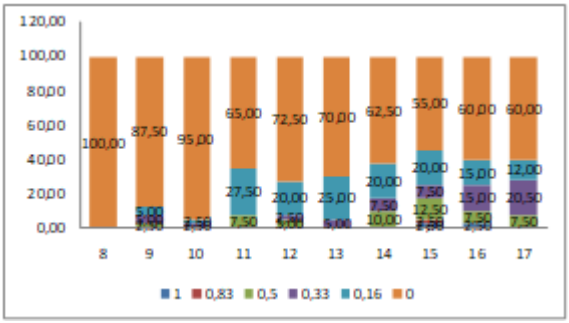

Figure 3: Relative shares of children with different levels of calculus index 0-1.

Calculus is defined as a mineralized biofilm, which has rough surface ideal for retention of pathogenic microorganisms. In our studied groupscore bigger than 1 has not been detected and mainly small deposits were seen. Only in children from the elder groups (15, 16, 17) calculus was detected. In the present literature we couldn't find any study concerning calculus deposition in young football players which makes difficult to compeer and discus our results. In general we can say that the deposits of calculus are relatively small.

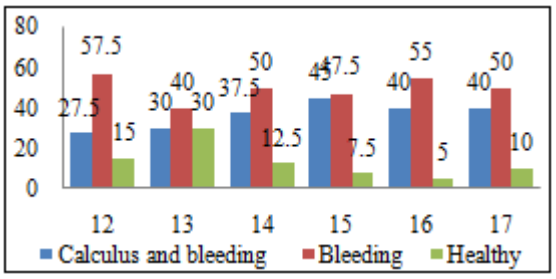

Figure 4: Relative shares of children with different levelsof PSR index

The studied group shows different levels of changes in the gingival tissues. We can say that as they grow up, the number of healthy sextants is decreased and in big percentage of them has bleeding. The biggest score registered is 2, which includes calculus and socket not bigger than 3 mm. More serious changes are not seen. The

problem is that the percentage of those with bleeding and calculus is quite high. In 12 years old the percentage is 85% and in the elder groups is getting bigger and reaches 95% in 17 years old. The hormonal changes which occur in puberty can also be contributing factor, but the problem is that the same results or worse are seen in elder groups. The presence of bleeding in gingival structures is an alarming symptom for inflammation in these children. The correlation between plaque and calculus indexes with gingivitis is confirmed in many studies, but in the present literature only few authors have studied this particular problem. Even though the findings aren't enough, there are some contradictions between them.

Needleman et all, conduct a research in which professional footballers from England are included [5].Their results show that 76.7% of all participants have gingivitis, the form of gingivitis is not mentioned. These results are close to ours and confirm our findings. Esra E. et all,[2]conduct a research in Turkey about the oral health and personal oral hygiene habits in young footballers. The children are 100 aged from 12-14 years, half of them are footballers and the other half non exercising children. Their results show that children participating in football have healthier gingival tissues and better oral health compare to the control group.

4. Conclusion

Children participating actively in football don't have adequate oral hygiene, even though their deposits of calculus are low. The plaque index show high scores and the percentage of these children is significantly big. Bleeding from the gingival tissues is seen in many of the participants which is a result of inflammation due to bad oral hygiene. Changes in the personal oral health habits and motivation are basic for improving oral health in adults and children. Providing a professional oral hygiene for removing calculus and plaque is needed andantiplaque means with anti inflammatory effect can also be recommended.

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