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Evaluation of Periodontitis and Gingivitis in Athletes.

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ABSTRACT

To evaluate the periodontal and gingival status of athletes. Relevance of periodontal and gingival abnormalities in athletes. Oral health is important for both well being and successful elite sporting performance. The aim of this study is to evaluate oral health , in relevance to well –being, training and performance of athletes. 40 athletes from Chennai sports community are examined and gingival index, probing depths, attachment loss are recorded and results are tabulated. Recent reports says that athletes have poor oral hygiene and high incidence of gingival and periodontal diseases.

Keywords: periodontitis, gingivitis, athletes

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INTRODUCTION

Periodontal or gum disease is a pathological inflammatory condition of the gum and bone support (periodontal tissues) surrounding the teeth .Periodontium is the functional unit of tissues supporting the tooth. The components of the periodotium are periodontal ligament , gingivia , cementum and alveolar bone [1].

The two most common periodontal diseases are:

Gingivitis – inflammation of the gum at the necks of the teeth, and
Periodontitis – inflammation affecting the bone and tissues of the teeth.

Gingivitis

Most children have signs of some inflammation of the gingival tissue at the necks of the teeth; among adults, the initial stage of gum disease is prevalent. This condition is termed gingivitis and is characterized by redness of the gum margins, swelling and bleeding on brushing. [2]

There are two factors which causes gingivitis

Local factors: plaque and calculus
Systemic factors: vitamin K & C deficiency, platelet disorder, allery, hormonal imbalance and medication.

Gingivitis occurs in both chronic and acute forms. Acute gingivitis is usually associated with specific infections, micro-organisms, or trauma. Chronic inflammation of the gum tissue surrounding the teeth is associated with the bacterial biofilm (plaque) that covers the teeth and gums. Gingivitis was once seen as the first stage in a chronic degenerative process which resulted in the loss of both gum and bone tissue surrounding the teeth. It is now recognised that gingivitis can be reversed by effective personal oral hygiene practices [3].

No specific public health measure has been developed to prevent gingivitis other than the instruction of groups and individuals on how to effectively remove the bacterial plaque from around the teeth and gums with a toothbrush and floss. The acceptance of toothbrushing as part of daily grooming seems to have resulted in mouths being generally cleaner and showing less signs of inflammation, particularly among younger adults, though gingivitis is still widespread in the population.Bleeding probing is the earliest indication of gingival inflammation.[4].

score	Criteria
0	absence of inflammation
1	mild inflammation: slight change in colour
	little change in texture of any portion of
	but not the entire marginal or papillary
	gingival unit
2	Mild inflammaton :criteria as above but
	involving the entire marginal or papillery
	gingivial unit
3	Moderate inflammation :glazing,redness
	and /or hypertrophy of the marginal
	or papillary gingival unit
4	Severe inflammaton:marked redness,
	edema,and /or hypertrophy of the marginal
	or papillary gingival unit;spontaneous
	beelding,congestion or ulceration[5]

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Periodontitis

Periodontitis is always preceed by gingivitis but not all gingivitis progresses to periodontitis. When periodontal disease affects the bone and supporting tissue, it is termed periodontitis and is characterised by the formation of pockets or spaces between the tooth and gums.This may progress and cause chronic periodontal destruction leading to loosening or loss of teeth. The dynamics of the disease are such that the individual can experience episodes of rapid periodontal disease activity in a relatively short period of time, followed by periods of remission.Though the majority of adults are affected by gingivitis, gingivitis fortunately does not always develop into periodontal disease. Progression of gum disease is influenced by a number of factors which include oral hygiene and genetic predisposition. One of the challenges for early detection of periodontal disease is its "silent" nature – the disease does not cause pain and can progress unnoticed. In its early stages, bleeding gums during toothbrushing may be the only sign; as the disease advances and the gums deteriorate, the bleeding may stop and there may be no further obvious sign until the teeth start to feel loose. In most cases, periodontal disease responds to treatment and although the destruction is largely irreversible its progression can be halted [6].

score	Criteria
0	negative :There is neither overt inflammtion
	in the investing tissues nor loss of function due
	to destructive of supporting tissues
1	Mild gingivitis : There is an overt area of inflammation
	in the investing tissues nor loss of function due
	circumscribe the tooth
2	Gingivitis : Inflammation completely circumscribes
	the tooth but there is no apparent break in the
	epithelium attachment
6	Gingivitis with pocket formation : The epithelial attachment
	has been broken ,and there is a pocket (not
	merely a deepened gingival crevice due to swelling
	in the free gingiva).There is no interference
	with normal masticatory function , the tooth is firm
	in its socket ,and it has not drifted
8	Advanced destruction with loss of masticatory
	function.The tooth may be loose ,may have drifting
	may sound dull onpercussion with a metallic
	instruments, or may be depressible in its socket.[7]

MATERIAL AND METHOD

The present study was conducted in jawaharlal Nehru stadium in chennai from November 2014 to May 2015 . Four trained and standardized dental professionals performed dental screening of athletes. Performa was used record the data such as pocket depth, loss of attachment ,gingival index and dmfs.

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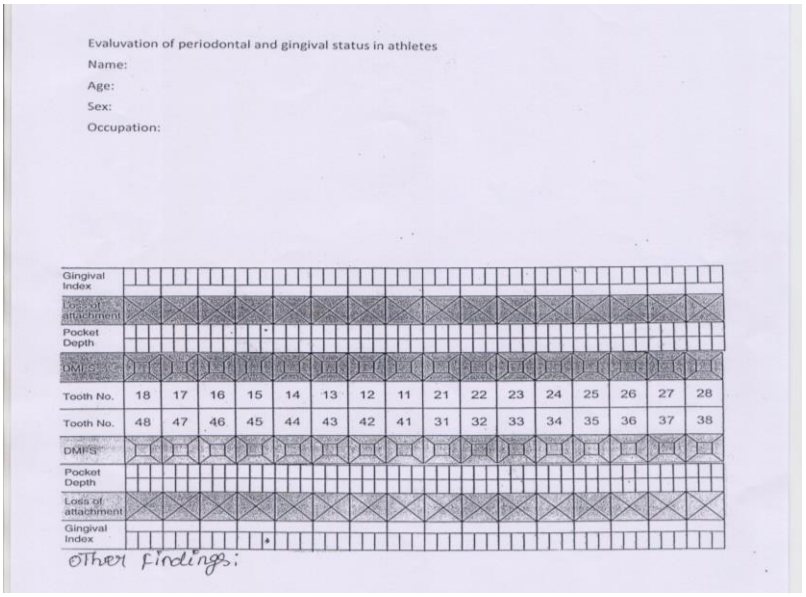
Evaluvation of periodontal and gingival status in athletes

Name:

Age:

Sex:

Occupation:

Gingival Index															
Loss of attachment															
Pocket Depth															
DMFS															
Tooth No.	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
Tooth No.	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
DMFS																
Pocket Depth																
Loss of attachment																
Gingival Index																

Other findings:

RESULTS

The collected data was analysed with SPSS16.0 version .To describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical variables and for continuous variables the mean an S.D were used .To find the significance difference between the bivariate samples in independent groups (males &female) Mann-Whitney U test was used .To assess the relationship between the variables spearman's rank correlation was used .In the above statistical tools the probability value .05 is considered as significant level

NPar Tests					
Mann-Whitney Test					
Ranks					
SEX		N	Mean Rank	Sum of Ranks	
POCKETDEPTH	0	18	16.89	304.00	
	1	22	23.45	516.00	
	Total	40			
GINGIVAL INDEX	0	18	17.47	314.50	
	1	22	22.98	505.50	
	Total	40			
DMFS	0	18	16.25	292.50	
	1	22	23.98	527.50	
	Total	40			
Group Statistics					
SEX		N	Mean	Std. Deviation	Std. Error Mean
POCKETDEPTH	0	18	2.106	.5785	.1364
	1	22	2.436	.5038	.1074
GINGIVAL INDEX	0	18	.839	.1944	.0458

	1	22	.877	.1798	.0383
DMFS	0	18	4.28	3.528	.832
	1	22	6.95	3.316	.707

Test Statistics[a]

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Exact Sig. [2*(1-tailed Sig.)]
POCKETDEPTH	133.000	304.000	-1.773	.076	.079[b]
GINGIVAL INDEX	143.500	314.500	-1.784	.074	.140[b]
DMFS	121.500	292.500	-2.108	.035	.037[b]

a. Grouping Variable: SEX

b. Not corrected for ties.

The comparison between male and female scores using man whitney u test in pocket depth and gingival index shows that there is no statistical significance difference with p=.079 and p=.140 respectively whereas in DMFS score there is a sig difference with p=.037

Nonparametric Correlations

Correlations

			POCKETDEPTH	GINGIVAL INDEX	DMFS
Spearman's rho	POCKETDEPTH	Correlation Coefficient	1.000	.183	.119
		Sig. (2-tailed)		.259	.465
		N	40	40	40
	GINGIVAL INDEX	Correlation Coefficient	.183	1.000	.417**
		Sig. (2-tailed)	.259		.007
		N	40	40	40
	DMFS	Correlation Coefficient	.119	.417**	1.000
		Sig. (2-tailed)	.465	.007	
		N	40	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

The relationship between the pocket deoth and gingival index shows that there is no sig. Correlation whereas in DMFS and gingival index shows the sig correlation with p=.417 with p=.007.

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Normal gingiva

Inflamed gingiva

Decayed tooth

DISCUSSION

It should be emphasized on the population of athletes and screening of their oral health status . Specific limitations of this study include oral examination of the athletes using mouth mirror , Williams periodontal probe ,explorer and flash light [8].With proper radiographic follow up, it is capable of producing an accurate evaluation of the oral health status of the athletes[9]This study was conducted after reading the research done in London Olympic 2012[10].

CONCLUSION

The above study concludes that among 40 athletes examined from the sports community of chennai had gingivitis. Prevalence of dental caries was high in the study population. According to this study periodontitis was not prevalent in the study population.

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