

State of periodontal health of children talibes of the prefecture of Banamba in Mali: 205 observations

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ABSTRACT

Introduction: Oral and periodontal health are fundamental elements of overall health. All children and adolescents should have access to preventative and curative oral care. Thus the aim of this work is to evaluate the periodontal health of talibés children in Banamba circle.

Materials and methods: This was a cross-sectional, descriptive study based on the observation of the periodontal health status of 205 talibé children aged 3 to 18 enrolled in traditional Koranic schools residing in Banamba Circle. the recruitment was non-exhaustive, were included in the study any student talibé aged 3 to 18 years enrolled in one of the selected Koranic institutions and who agreed to answer the questionnaire and to be examined. The information and clinical data were recorded on a survey form developed for the circumstance according to the objectives of the study, the talibés were invited to answer the questionnaires after obtaining their informed verbal consent and that of their master. Data entry was performed on the Word 2010 office software and data analysis from EPI-info-3.5.3.French version software.

Results: The male sex was the most represented with 95.60% of cases; with a sex ratio of 21.78. The age group of 8 to 12 years was the most represented with 49.27% of the cases, 142 talibés children had at least one decayed tooth (69,27% of the cases). The talibés had an average plaque index in 40.00% of cases. Severe inflammation was 0.49% and scaling was the most represented

CPITN treatment need index at 62.50%. There is no statistically significant relationship between plaque index, gingival index, and age group.

Conclusion: The study found that the periodontal health status of talibés is satisfactory. There was no statistically significant relationship between plaque index, gingival index, and age group. It is important to educate talibé children about the benefits of brushing their teeth with a particular focus on frequency and timing.

Keywords: Periodontal health, Talibés children, Rural area

INTRODUCTION

Oral and periodontal health are fundamental elements of overall health. All children and adolescents should have access to preventative and curative oral care. Oral and periodontal health can affect the functional, psychological and social dimensions of child well-being. Oral and periodontal pain has devastating effects on children, including loss of sleep, stunting, behavioral problems and learning delays. Processes of communication, socialization and self-esteem, essential for development. Oral and periodontal disorders are associated with a significant decrease in school attendance and working days of parents [1]. Oral and periodontal diseases more often reach poor and socially marginalized populations.

Periodontal diseases or periodontal diseases are multifactorial diseases with infectious etiology and inflammatory manifestation resulting in the destruction of tooth support tissues [2]. In addition to the bacterial biofilm as a primary etiological factor, other secondary etiological factors or risk factors determine the onset, progression and clinical presentation of periodontal disease [3].

Although thousands of children receive regular oral and periodontal care, others have serious problems in receiving the care they need. These children come mostly from disadvantaged social strata.

In our study we will focus on a specific community based on the Muslim religion: the Talibés; students from Koranic school or MEDERSA. Indeed, these talibé children attending traditional madrasas are considered as rejects of society. They live in precarious conditions, most often characterized by promiscuity and insecurity. To this must be added deplorable sanitary conditions, without assistance, without help. They are abandoned to themselves. Their Koranic education is random because the conditions are difficult and without a promising future, because very often, these children, if they do not switch to petty crime during their stay in the medersas, will extend the already too long list of unemployed because they have religious and non-professional training.

During the Koranic learning period, these talibé children do not benefit from any social and especially health care.

Many studies have been carried out in Mali in schools, some studies have been done on oral health in the interior of the country but very few studies have been done on Koranic schools even less traditional Koranic schools, In view of this lack, we set ourselves the objective of studying the periodontal health of talibé children in Banamba prefecture.

MATERIALS AND METHOD

It was a cross-sectional, descriptive study based on observation of the periodontal health status of talibé children aged 3 to 18 living in Banamba prefecture. The study included 205 talibé children enrolled in the traditional Koranic settlements of the following villages: Touba, Kiban, Banamba town. It was a non-exhaustive recruitment of talibés in the different Koranic institutions mentioned above in the study framework. Talibés were submitted to the questionnaire and examined on an oral and periodontal basis. All talibé pupils aged 3 to 18 enrolled in one of the selected Koranic schools were included in the study and agreed to answer the questionnaire and be examined. Not included in the study were any Koranic students enrolled in one of the selected Koranic schools who were not in the age group of 3 to 18 years and those who did not agree to answer the questionnaire. and to be examined.

The information and clinical data were recorded on a survey form developed for the circumstance according to the objectives of the study, the talibés were invited to answer the questionnaire after obtaining their informed verbal consent and that of their master.

Data entry was performed on the Word 2010 office software and data analysis from EPI-info-3.5.3.French version software.

RESULTS

The male sex was the most represented with 95.60% of the cases; with a sex ratio of 21.78 (Table I).

The age group of 8 to 12 years was the most represented with 49.27% of cases, The age of 12 years was the most represented with 19.00% of cases and the average age was 10, 50 with extremes ranging from 3 to 18 years (Table II).

In our sample, 142 talibé children had at least one decayed tooth (69.27% of cases), of which 229 teeth were temporary teeth (40.24%) and 320 permanent teeth (56.40%).

The talibés had an average plaque index in 40.00%, followed by a good index in 53.17% of cases (Table III).

The severe inflammation was 0.49% and the average was 5.86% (Table IV).

Scaling was the most important CPITN treatment need index with 62.50% of the 32 patients aged 15 years and older in our sample (Table V).

The talibés had an average plaque index in 40.00%. There is no statistically significant relationship between plaque index and age group (Table VI).

There is no statistically significant relationship between gingival index and age group (Table VII).

DISCUSSION

Our study is part of a cross-sectional, descriptive study based on the observation of the periodontal health status of talibés carried out at the traditional Koranic schools of Banamba, Touba, Kiban on an absolute number of 205 elderly talibés. ages 3-18 years from December 02, 2015 to January 15, 2016 to assess the periodontal health status of these talibés.

In our study, the male sex was the most represented with 95.60% and a sex ratio of 21.78. The talibés in our sample were between 3 and 18 years old. The most represented age group was 7 - 12 years old with an average age of 10.50 years.

This numerical predominance of boys over girls is explained by the fact that traditional Koranic schools; since their implantation, have kept their traditional character that the boy alone is talibé. The girls found are usually the daughters of the Koranic masters. This result could be explained by the fact that parents who happily send their daughters there sometimes have fears for Western-style education.

In our sample, 142 talibé children had at least one decayed tooth (69.27% of cases) of which: 229 teeth were temporary teeth (41.71%) and 320 permanent teeth (58.29%).

The study had no dental plugging (O), the number of decayed teeth (C) was 549 and the number of missing teeth (A) was 24; thus, the average CAD index is 2.79. This index does not comply with World Health Organization (WHO) standards which consider a low index between 1.2 and 2.6 [5]. In the definition of severity criteria based on caries achievement levels by WHO, the prevalence is moderate if it is in the range $2.7 < CAD < 4.4$.

Our study reveals that the prevalence of caries among a population of 205 talibé children is 69.27%. This result is superior to that of Michèle MB et al [6] in the city of NICE, according to them the permanent molars of the children were significantly more often decayed irreversibly (caries of dentin) or not (caries of enamel).) with CAOD 6 index, equal to the CAOD which was (0.28 ± 0.74) ; as well as the number of decayed permanent teeth $(0.22 \pm 0.62$ versus 0.09 ± 0.42 , $p < 0.001$). This difference is explained by the absence of a real oral health program for Koranic schools in Mali.

Through our study we found that only 42.43% of talibés had a healthy periodontium, 57.55% had gingival inflammation. The severe inflammation was 0.49% and the average was 5.86% of the cases. According to GLICKMAN [7], the prevalence of gingivitis at age 15 is 80%. This result could be explained by the use of sticks rubbing teeth and a minimum consumption of sugar by the talibés.

Scaling was the most important CPITN treatment need index with 62.50% of the 32 patients aged 15 and over in our sample. This result is comparable to that of DIAWARA O et al [8] who found a score of 2 CPITN (Teaching in oral hygiene and descaling) was observed in 67.52% of pupils and according to them the periodontal care concerned only 23 students, a rate of 12.17%.

Analysis of the plaque index showed that 93.17% of talibés had sex-independent plaques with an average plaque index in 40.00% of cases. The analysis of the age group according to the plaque index and the gingival index shows that there is no statistically significant link. This result is comparable to that of DIAWARA O et al [8] who found that gingival inflammation was found in 87.84% of pupils, 14.72% had at least one tooth with pockets of 4 to 5mm, and 2.40% had at least one tooth with 6mm pockets. There were no statistical links between sex, level of literacy, oral hygiene and plaque index; likewise between the gingival index, the sex and the literacy level. Statistical calculations were performed with Pearson's Chi-2 with an alpha risk of less than or equal to 0.05.

CONCLUSION

The study found that the periodontal health status of talibés is satisfactory. There was no statistically significant relationship between plaque index, gingival index, and age group.

Indeed, all over the world, experience has shown that no matter the health system of a country, a program of care unaccompanied by a prevention program has never solved the problem of oral health. It is important to educate talibé children about the benefits of brushing their teeth with a special focus on frequency and timing.

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ILLUSTRATION

Table I: Distribution of the workforce by gender

Sex	Effective	Fréquency (%)
Male	196	95,60
Female	9	4,40
Total	205	100,00

Table II: Distribution of the workforce by age group

Age range (in years)	Effective	Fréquency (%)
3 – 7	42	20,49
8 – 12	101	49,27
13 – 18	62	30,24
Total	205	100,00

Table III: Distribution of talibés according to the plate index

Plate index	Effective	Fréquency (%)
Excellente (0)	14	6,83
Good (0,1 - 0,9)	109	53,17
Average (1 – 1,9)	82	40,00
Low (2 – 3)	0	0,00
Total	205	100,00

Table IV: Distribution of talibés according to the gingival index

Gingival index	Effective	Fréquency (%)
Absent inflammation (0)	87	42,43
Mild Inflammation (0.1-0.9)	105	51,22
Average inflammation (1 - 1.9)	12	5,86

Severe inflammation (2 - 3)	1	0,49
Total	205	100,00

Table V: Workforce Distribution by CPITN Index

CPITN index	Effective	Fréquency (%)
No treatment	5	15,50
Hygiene education	2	6,30
Scalling	20	62,50
Curettage and root planing	3	9,40
Complex treatment	2	6,30
Total	32	100,00

Table VI: Distribution of the size of the plaque index in relation to age groups

Plate index Age	excellente		good		Average		Bad		Total	
	Number	%	Nber	%	Nber	%	Nber	%	Number	%
3 – 6	9	4,39	27	13,17	6	2,93	0	0,00	42	20,49
7 – 12	4	1,95	48	23,41	49	23,90	0	0,00	101	49,27
13 – 18	1	0,49	34	16,58	27	13,17	0	0,00	62	30,24
Total	14	6,83	109	53,17	82	40,00	0	0,00	205	100,00

Chi-quarré **df** **Probabilité**
 3,4462 2 0,1785

Tableau VII : Distribution de l'effectif de l'indice gingival par rapport aux groupes d'âge

Gingival index Age	Absent Inflammation		Mild Inflammation		Average inflammation		Severe inflammation	
	Nber	%	Nber	%	Nber	%	Nber	%
3 – 6	30	14,63	10	4,88	2	0,97	0	0,00
7 – 12	35	17,07	62	30,24	4	1,95	0	0,00
13 – 18	22	10,73	33	16,10	6	2,93	1	0,49
Total	87	42,44	105	51,22	12	5,85	1	0,49

Chi-quarré df Probabilité

2,3927 2 0,3023