

Report on the Survey of Dental Diseases in Fiji (1982)

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Introduction

For a dental researcher, it is very important to cast light on the oral condition and to examine the specific problems in communities from the viewpoint of dental health and the prevention of oral diseases. In a self-contained subsistence community, the diseases, which are chiefly due to nutritional disorders and infectious diseases, are closely related to foods and have influence on community activities. Oral condition reflects systemic condition and is more directly related with food natures and habits. Some of the specific oral diseases such as dental caries, periodontal diseases and malocclusion are considered to be caused mainly by these basic factors.

This paper is a report of an appraisal survey preceding the adequate one. We made an attempt to examine the state of dental diseases and care in a self-contained subsistence community although we could not elucidate the details of foods and habits during this survey.

Methods and Subjects

We applied the method corresponding to 'Combined oral health and treatment assessment' (W.H.O. 1977) and besides took full mouth impressions for the examination of the occlusion.

We examined the subjects on Nov. 26, 29, and 30, 1982 at Galoa Village, Vunibau Village and Raiwaga (Navua) Village in Viti Levu island (Fig. 1). All subjects are native Fijians and live the self-contained subsistence community life in these villages. The number of examined subjects are fifty (15 males and 35 females) and age distribution is 15 to 77 years of age.

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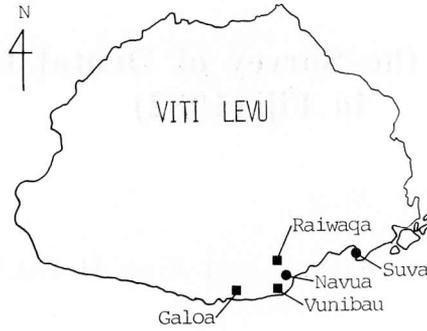


Fig. 1. The location of the villages (■) in this survey.

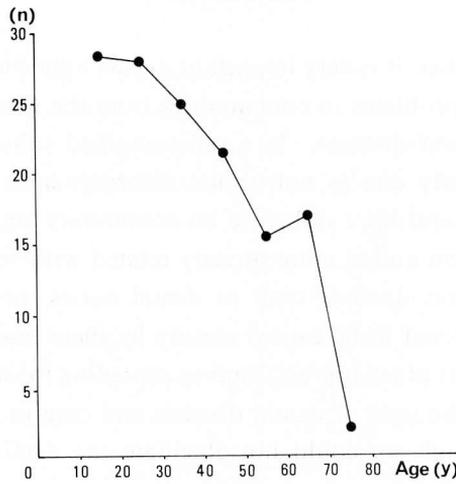


Fig. 2. The relationship between the mean number of existing permanent-teeth and age.

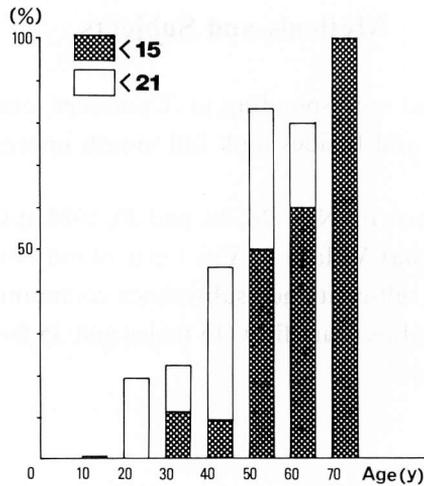


Fig. 3. The relationship between the percentage of subjects with less than 21 teeth or less than 15 teeth and age.

Results

1. Teeth condition : The condition of existing permanent-teeth of the subjects is shown in Figs. 2 and 3. The mean number of existing permanent-teeth steeply decreases with subjects' ages. After the forties, more than half of them have permanent-teeth fewer than twenty-one, that is about 30 percent loss of total permanent-teeth. After the fifties, more than half of them loss about 50 percent of total permanent-teeth.

2. Caries : The relationship between the mean number of dental caries and age is shown in Fig. 4. The mean number of decayed teeth (DT) indicates mostly three to four in any age. After the forties, many root surface caries were found. The mean number of filling teeth (FT) is very few. The filling material was only amalgam. These fillings were found mostly on the occlusal surface of the molars. The mean number of missing teeth (MT) increases streightly with subjects' ages.

3. Tooth deposits : The Fig. 5 presents the condition of tooth deposits (SD, soft deposits; and CA, calculus). The dentition was divided into six segments of anterior teeth, right and left molar teeth in each jaw. These percentages of the involved segments increase with subjects' ages. The relative frequency of soft deposits precedes that of calculus. Calculus was markedly found on the lingual surface of the mandibular anterior teeth.

4. Periodontal diseases : The Fig. 6 presents the occurrence of periodontal diseases. The segments involved by intensive gingivitis were found even among the

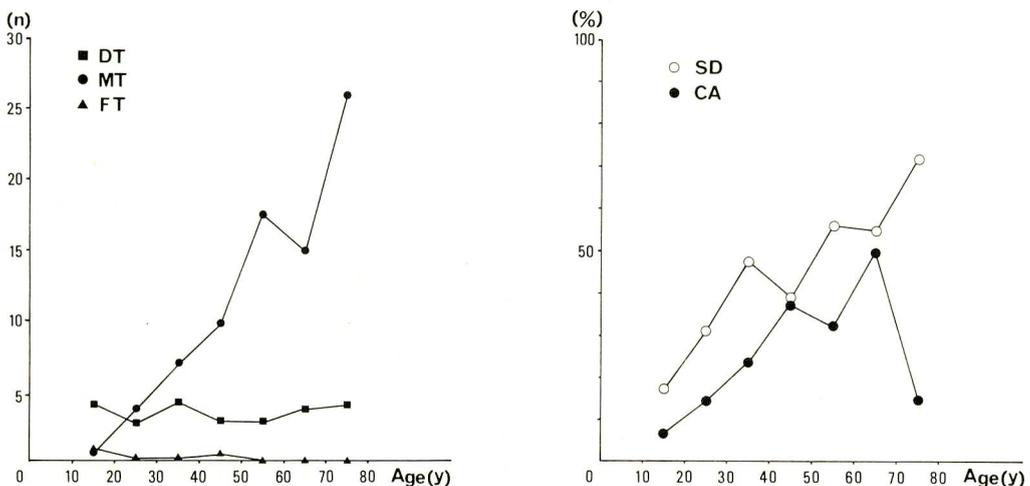


Fig. 4. The relationship between the mean numbers of DT*, FT** and MT*** and age. DT*, decayed teeth; FT**, filling teeth; MT***, missing teeth.

Fig. 5. Occurrence (relative frequency) of involved segments with age. SD, soft deposits; CA, calculus.

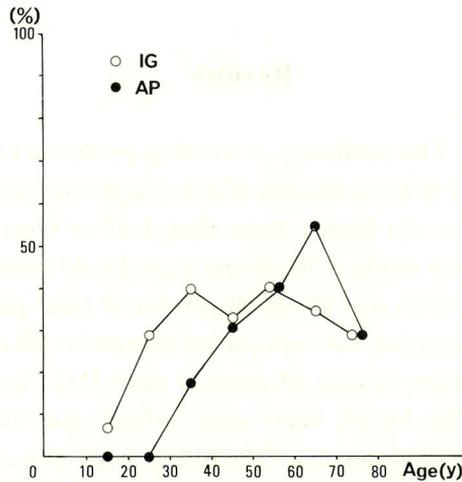


Fig. 6. Occurrence (relative frequency) of involved segments with age. IG, intense gingivitis ; AP, advanced periodontal involvement.

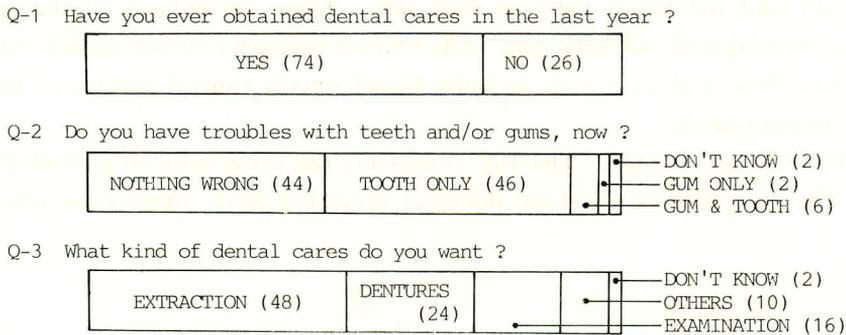


Fig. 7. The categorized summary of answers to individual interviews. (), percentage

teen-agers. Advanced stages of periodontal involvement segments are found increasingly with subjects' ages after the thirties.

5. Individual interviews : The Fig. 7 presents the categorized summary of answers to individual interviews. The first question (Q-1) is regarding with the experience of dental cares in the last year. Seventy-four percent of subjects obtained dental cares. The second question (Q-2) and third question (Q-3) are concerned with the self-awareness of dental diseases and consciousness of dental cares. Forty-four percent of subjects now consider no troubles with teeth and/or gums. Forty-six percent of them consider troubles with teeth only. The only eight percent of them consider troubles with gums, too. Forty-eight percent of them want to extraction of tooth. Twenty-four percent of them want dentures. Sixteen percent of them want to obtain examinations.

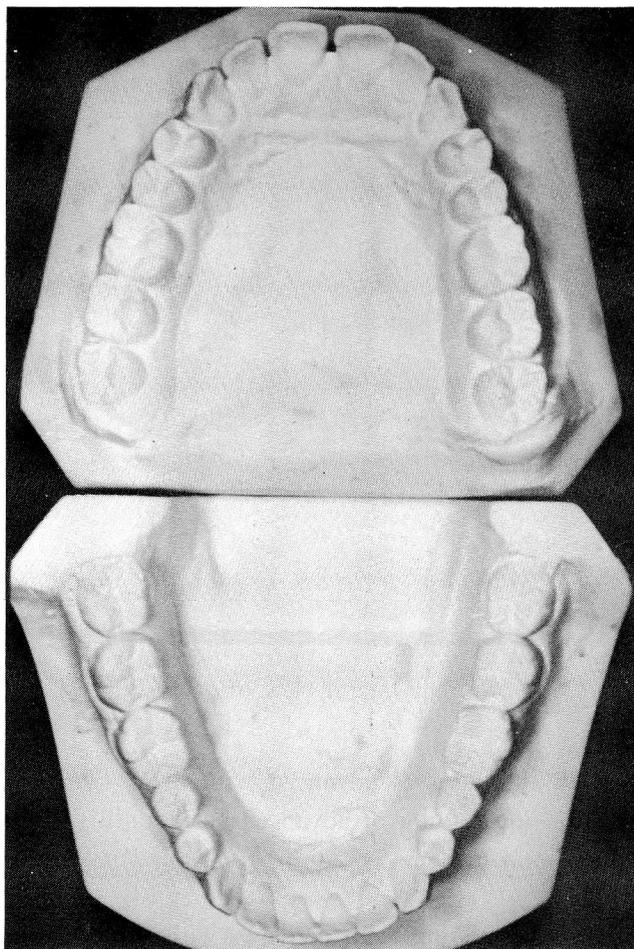


Fig. 8. The occlusal view, 21 years old woman.

Discussion

These subjects showed good growth of maxillofacial and oral structures. The majority of the subjects had third molars with normal exposure. They had several anomalies in position of the individual teeth but it seemed to be few cases of malocclusions result from the discrepancy in size between teeth and jaw bones among them (Fig. 8 and 9).

Their oral hygiene condition is bad. However, the mean number of carious teeth is rather few. It should be considered that this fact results from a smaller quantity of sugar ingestion. They take sugar with tea at breakfast and evening meal (Nayacakalou, 1978).

The periodontal state is worse than caries state (Fig. 10-13). Intensive plaque deposition, either with or without calculus and severe gingivitis, was found in younger

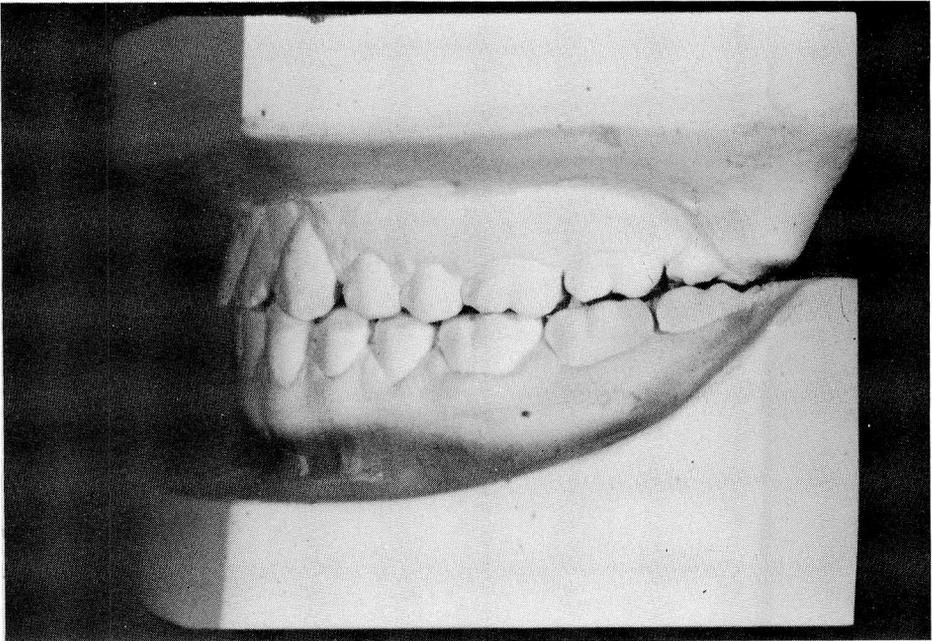


Fig. 9. The lateral view of occlusion.

subjects. The periodontal diseases advanced with ages. There were many teeth necessary for extraction on account of advanced periodontitis. This state needs an adequate education of oral hygiene for adult peoples and it should be improved by such means.

The mean number of missing teeth increases with subjects' ages. The most of dental treatments for native Fijians are tooth extraction. Most native Fijians such as these subjects do not have dentures because they have insufficient cash to obtain it. Easygoing tooth extraction should result in destruction of occlusion and advanced periodontal diseases.

The health care in a self-contained subsistence community ought to be based on the recognition of present disease state and circumstances and should organize preventive measures under the steady programs. Planless treatments will bring more complex problems to the community.

In Fiji, substantial education of oral health and hygiene for adult villagers as well as school children is needed although we cannot help pointing out insufficiency of the number of capable persons and of the sources of revenue for dental cares.

Summary

The oral condition of native Fijians and dental cares were examined in this survey. The state of oral hygiene was bad and it resulted intensive gingivitis and advanced

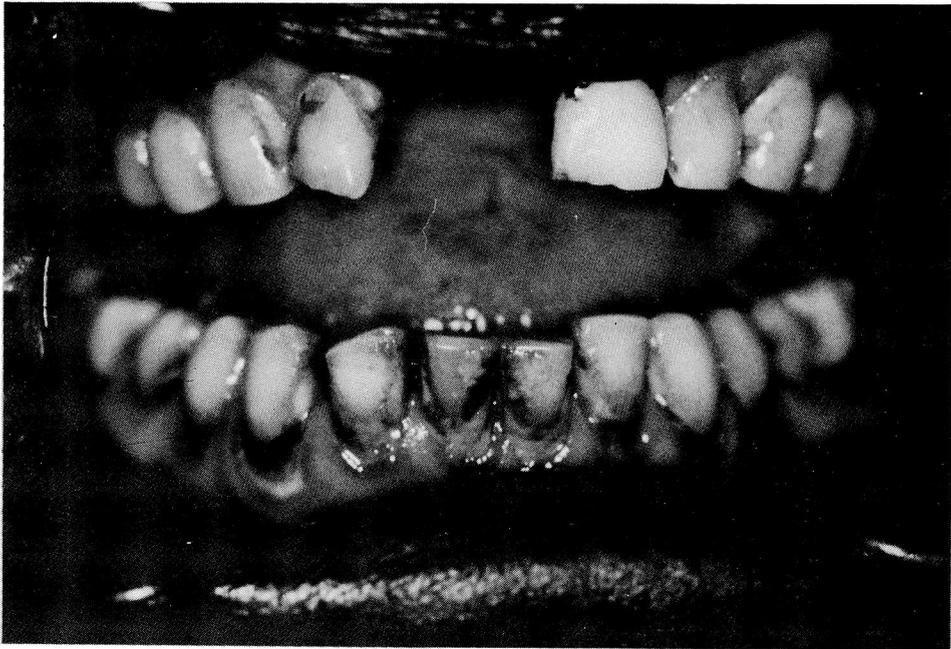


Fig. 10. Periodontitis, moderate, 35 years old woman.

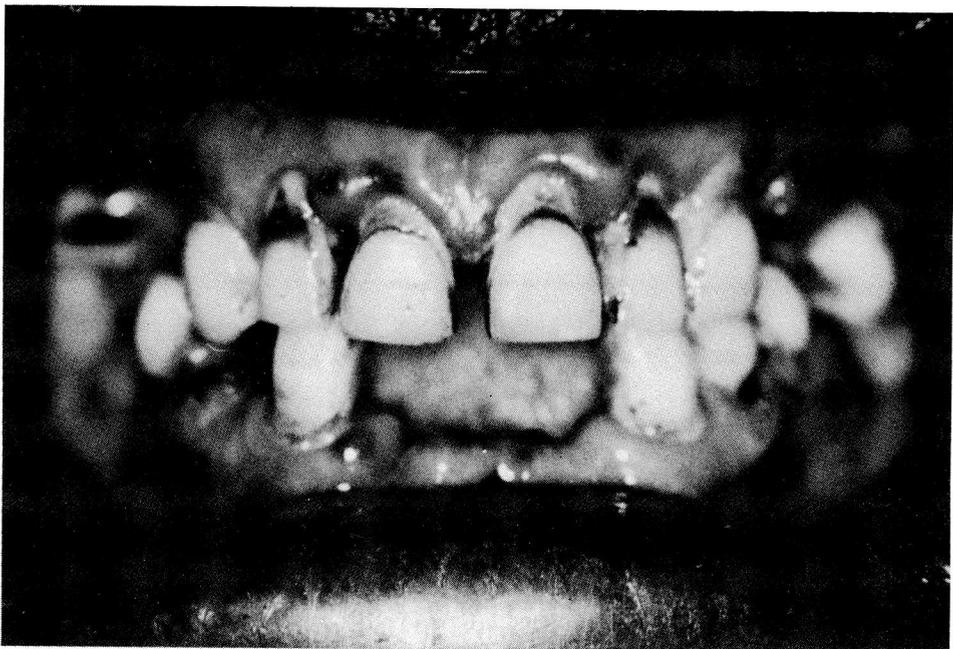


Fig. 11. Periodontitis, advanced, 40 years old man.

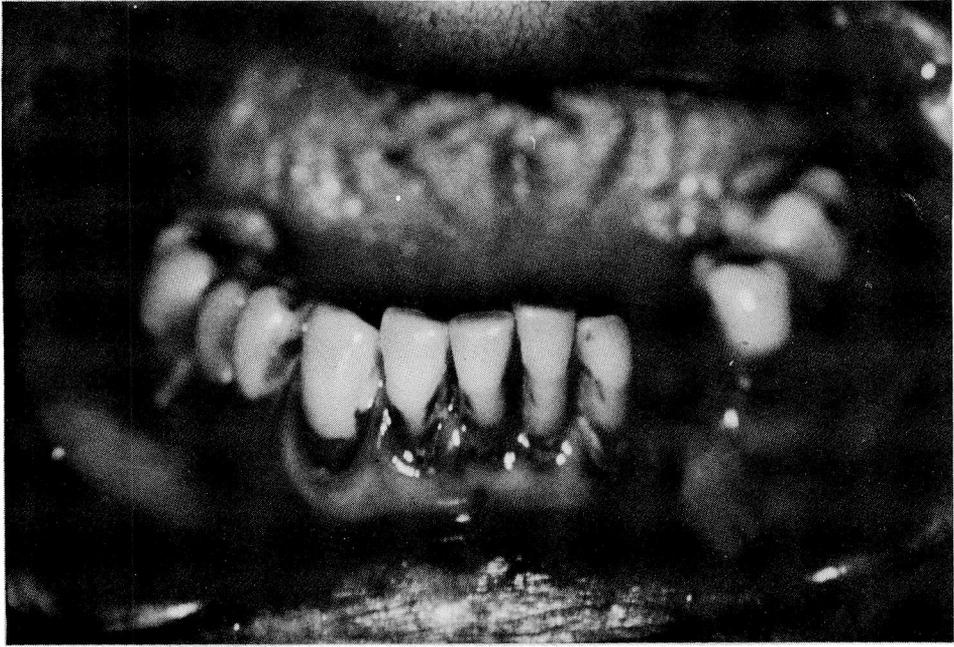


Fig. 12. Periodontitis, advanced, 55 years old woman.



Fig. 13. Periodontitis, advanced, 60 years old woman.

periodontitis. The tooth condition was rather good. The decayed teeth were three to four in any ages. The dental care was poor and most of it was tooth extraction. There is many problems of dental cares. Easygoing tooth extraction should bring malocclusion and advance periodontal diseases. It seems to be needed substantial education and measures of oral health and hygiene for native adult villagers.

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