mentioned infrequently brushing young adult males were aware of their own oral conditions.

MATERIAL AND METHODS

In connection with a thorough clinical and radiographic dental examination of 167 young adult males, mean age 20.1 years (*Ainamo*, 1970a), questionnaires were used in order to obtain answers from the examinees to the following questions:

— how many unfilled cavities do you believe that you have in your teeth right now,
— do you believe that gingival inflammation is present in your dentition,
— when brushing your teeth, have you noticed gingival bleeding a) lately, b) earlier or c) never.

The written answers were checked in the presence of the examinee. A total of 146 answers were obtained on the question on dental caries while 166 subjects answered the questions on gingival conditions.

In the clinical examination all fully erupted teeth were scored for gingivitis according to the Gingival Index by *Löe & Silness* (1963). The number of decayed tooth surfaces (DS) (*Klein et al.*, 1938) was recorded by means of both a clinical examination and an orthopantomogram and four intraoral bite-wing radiographs of each subject (*Ainamo*, 1970a).

RESULTS

In Table I the subjective caries assessments of the examinees are shown in relation to the results of the clinical and radiographic examination. In all groups a higher assessment corresponded to a higher true number of carious lesions ($p<0.001$).

Table II shows that 15.5 % of the examinees could not tell whether they had gingivitis or not, while 82.5 % thought themselves to be healthy in this respect, and only 2 % assumed that they might have gingivitis. None of the same subjects was unable to tell whether he had or had not observed gingival bleeding when brushing his teeth (Table III). 54 % had not observed bleeding. Of the remaining 46 % only 16 % had noticed bleeding from the gingivae lately and the rest remembered that this had been the case at an earlier occasion.

Table I.

A comparison of the numbers of decayed teeth as assessed by the examinee and the numbers of decayed tooth surfaces (DS) as recorded by the examiner

No. of carious teeth as assessed by the examinee	No. of subjects	No of carious tooth surfaces as diagnosed by the examiner	
		Mean	S.D.
0—1	40	10.37	6.79
2—3	40	16.15	9.89
4—5	29	18.65	10.07
6—7	13	24.15	13.92
8 or more	24	31.92	18.83
Total	146	18.37	13.52
Significance (F-test)		$p<0.001$	

The results of the clinical examination of the gingivae are shown in Table IV. All the examinees displayed both gingivitis ($\bar{x}$ GI>0) and gingival bleeding (GI $= 2$). The lowest mean individual GI score recorded was 0.55 and the smallest number of gingival margins that bled when pressed upon with a blunt instrument, was three surfaces per person.

DISCUSSION

Though almost every Scandinavian child becomes familiar with filling of the teeth already at an early age, it was surprising to see the accuracy with which the examinees were able to assess the number of open cavities in their teeth (Table I). The present study did not reveal whether their dental treatment had been neglected because of general indolence, lack of motivation or because of the high expense of dental care.

Table II.

Numbers and percentages of subjects to whom gingivitis was unknown, who thought they did not have gingivitis, and who thought they might have gingivitis

	Presence of gingivitis as assessed by the examinee			Total
	Unknown	Negative	Positive	
Number	26	137	3	166
Per cent	15.5	82.5	2	100

Table III.

Numbers and percentages of subjects to whom gingival bleeding was unknown, who had not noticed bleeding, and who were aware of earlier and/or recent gingival bleeding

	Occurrence of gingival bleeding as assessed by the examinee					Total
	Unknown	Negative	Anamnestic	Recent	Continuous	
Number	0	89	50	9	18	166
Per cent	0	54	30	5	11	100

The recognition of gingival inflammation and its symptoms was extremely poor. Only three of the examinees (2 %) thought that they may have gingivitis (Table II) although 77 of the same subjects (46 %) stated that they had noticed gingival bleeding when brushing their teeth (Table III). Their ignorance of gingivitis was further confirmed by the fact that a total of 26 subjects (15.5 %) were unable to give any answer to the question (Table II). Gingival bleeding, on the other hand, was familiar to all the subjects (Table III), they were only unable to connect bleeding with its cause, gingival inflammation.

89 subjects (54 %) had not noticed gingival bleeding (Table III) in spite of the fact that the clinical examination revealed both gingivitis and gingival bleeding at pressure in each subject (Table IV). This controversy probably results from the practising of inefficient oral hygiene measures which systematically leave certain regions of the dentition uncleaned. According to earlier studies of the same material, habitual tooth-cleansing is restricted mainly to the facial surfaces of the anterior teeth (*Ainamo*, 1970 a, 1970 b) which means that the gingivitis located on the facial surfaces of molar teeth and on most oral surfaces, does not necessarily lead to gingival bleeding when the teeth are brushed.

In comparison, with for example the United States, the toothbrushing frequency in Finland and partly also in the other Scandinavian countries,

Table IV.

Numbers and percentages of subjects who were clinically found to have gingivitis ($\bar{x}$ GI>0) or gingival bleeding (GI = 2) in one or more gingival areas

	$\bar{x}$ GI > 0	GI = 2
Number	166	166
Per cent	100	100

is low (see *Ainamo*, 1970 a, 1970 b). This difference may partly be due to the ignorance of gingivitis and its consequences which seems to prevail in the northern countries. Toothbrushing as a caries preventive measure requires special endurance and does not always yield the results wished for, as deep occlusal fissures and interproximal areas of the teeth may decay even in the mouth of a diligent brusher. Neither does toothbrushing cure already manifested carious defects in the teeth. The gingiva, on the other hand, directly reflects the effectiveness of past oral hygiene (*Glickman et al.*, 1964). A healthy gingiva thus indicates effectiveness of oral hygiene measures while an inflamed and bleeding gingiva, with maybe only a few exceptions, indicates that the oral hygiene has been unsuccessful. A better understanding of these elementary facts might contribute to an improvement of the general oral hygiene level and thus also decrease the amount of periodontal disorders. As this improvement in periodontal health would result from a decrease of the amount of bacterial deposits, it would at the same time have an important caries preventive function.

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