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DENTAL CONDITIONS AND NEED FOR DENTAL TREATMENT AMONG UNIVERSITY STUDENTS IN TURKU

II. PERIODONTAL, ORTHODONTIC, SURGICAL, PROSTHETIC AND PROPHYLACTIC TREATMENTS

by

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INTRODUCTION

Epidemiological studies in the field of periodontology have been carried out since the 1950s in several countries, among various races, various age groups, and among social groups of varying educational and economic standing. It has been found, e.g., that periodontal diseases increase with age and depend on oral hygiene, plaque and dental calculus (*Lövdal et al.*, 1958; *Schei et al.*, 1959; *Russell & Ayers*, 1960; *Johnson et al.*, 1965; *Waerhaug*, 1967). Women show a lower incidence thanks to their better oral hygiene (*Marshall-Day et al.*, 1955; *Russell & Ayers*, 1960). In young age groups these correlations have been found to be weaker (*Sherp*, 1964). It has also been found that the changes in the young age groups usually are superficial, mostly gingivitis, whereas after the 20th year of age the destruction of investing and supporting tissues increases (*Marshall-Day et al.*, 1955).

By his classification of malocclusions, Angle made it possible to study their epidemiology. Subsequently other reliable and practical indices have also been applied in mass examinations (*Granger*, 1961). Epidemiological studies have been carried out in several countries (*Korkhaus*, 1928; *Björk* 1947; *Massler & Frankel*, 1951; *Goose et al.*, 1957; *Mills* 1966; *Helm*, 1968). The results of the different studies, however, vary a great deal, since the methods are often subjective and the results are therefore not comparable.

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The authors even disagree as to what is and what is not a »regular» occlusion (*Massler & Frankel*, 1951).

Examination of the need for prosthetic treatment and dental or oral surgery has often been included in epidemiological studies covering all fields of dental care (*Johnson et al.*, 1965; *Richards et al.*, 1965). Such studies include e.g. one carried out among the Red Indians of the United States (US Department of Health, Education and Welfare, Public Health Service, 1967), which devoted attention to the number of teeth needing replacement by artificial dentures. In England, the number of prosthetic treatments has been recorded by nationalized dental services. The need for dental care among the elderly was recorded in connection with the examination of their general health. The distribution by age and sex of the edentulous population has also been studied (*Bates & Murphy*, 1968).

The need of treatment purely by oral and dental surgery has been studied for the epidemiology of certain pathological conditions (*Pindborg*,1968). The eruption of wisdom teeth is closely connected with the need for surgical treatment. A study of the subject has been carried out in Finland on student material (*Rantanen*, 1967). The frequency of factors leading to dental extractions has also been studied even on large populations (*Lundqvist*, 1967).

In an earlier paper (*Scheinin et al.*, 1970) the present authors published the results on operative and endodontie treatments obtained from dental examinations at the Students' Health Center in Turku in 1967. The purpose of the whole study is to establish the need for dental therapy among the university students of Turku and compare the extent and proportions of treatment required for caries and of periodontal, orthodontic, prosthetic and surgical treatment.

MATERIAL AND METHODS

The series comprised 394 students who started their studies at the various universities in Turku in the autumn 1966 (*Scheinin et al.*, 1969). Their distribution according to age and sex is shown in Table I.

The examinations were carried out at the University Students Health Center in Turku in the spring and autumn term of 1967. Every subject was examined clinically, in addition to which bite-wing radiographs were taken in every case (total 660 radiographs) and periapical radiographs when required (total 444). The details concerning caries are reported in Section I of this study.

The gingival index (GI) (*Löe* and *Silness* 1963) and plaque index (Pl I) (*Silness* and *Löe* 1964) of four different surfaces of six teeth,

the maxillary right first molar
» » » lateral incisor
» » left first bicuspid
» mandibular left first nolar
» » » lateral incisor
» » right first bicuspid,

were recorded for every student examined. The mean values of the surface indices represented the student's GI and Pl I. Missing teeth were not replaced.

The following criteria were used in recording:

GI

0. Absence of inflammation
1. Mild inflammation, slight change in colour and in texture
2. Bleeding from the gingiva on pressure with a blunt instrument.
3. Bleeding either spontaneously or on blowing with the air pump

Pl I

0. No plaque
1. No plaque is visible but can be shown by wiping the dental surface with a gingival pocket gauge
2. A moderate amount of plaque which can be seen by the naked eye on the tooth and at the gingival margin
3. Abundant plaque on the tooth and the gingival margin.

In order to establish the error of the method, all three examining dentists separately determined the GI of 41 students. An error of the method of statistical significance was found between the examiners. Steps were taken to correct the error by determining the mean values for the GIs of the students examined three times, and from them the correction coefficients for each examiner. The plaque index was not tested for error of the method, since the aim was to examine the students in only one visit.

Table I

Distribution of the material

Age in years

Sex	19	20	21	22	23	24	25—34	Total
Girls	6	87	75	11	6	4	6	195
Boys	6	46	53	62	14	11	7	199
Total	12	133	128	73	20	15	13	394

When the GI value was under 0.20 the periodontium was considered to be healthy, values 0.20—0.99 were interpreted as gingivitis, and 1.00 or more a severe gingivitis. The oral hygiene was classified as good when the plaque index was below 0.40, moderate if the values were 0.40—0.99. and poor if the Pl I was 1.00 or more.

Resorption of the alveolar bone was measured from the bite-wing radiographs, and bone loss percentage could therefore not be determined. When the distance between alveolar ridge and the cemento-enamel junction exceeded 1 mm, bone loss was considered to have occurred. Measurements of each tooth were taken mesially and distally from the bite-wing radiographs available for 348 students. However, 17.6 per cent of the teeth remained unmeasured since the cemento-enamel junction could not always be seen. Nor were the distal surfaces of second molars measured if the third molars were in position. A total of 4,586 teeth were measured.

To ascertain the types of occlusion and number of malocclusions the cases were divided, on the basis of the first molar relationship, into Angle's classes as follows:

s_1 first molars in normal occlusion
s_2 mandible in distal relationship to maxilla
s_3 mandible in mesial relationship to maxilla

The horizontal and vertical incisal relationship was determined as follows:

t_1 normal horizontal overjet
t_2 marked horizontal overjet (equal to Angle's Class II Div. 1)
t_3 tête-à-tête position or cross-bite
v_1 normal vertical overbite (the upper incisor covers less than half the lower incisor)
v_2 deep overbite (e.g. Angle's Class II, Div. 2)
v_3 open bite

Angle's class could be determined for 338 (86 per cent) of the examined, molars were missing in 37 (9.4 per cent), and 19 cases (4.8 per cent) could not be classified for other reasons.

The relationship of each individual tooth to the dental arch and plane of occlusion was determined, and even small deviations were recorded using the following symbols (*Massler & Frankel*, 1951):

B buccal displacement of the tooth
L lingual displacement of the tooth
M mesial displacement of tooth

D distal displacement of tooth
R rotation of tooth, either mesially MR or distally DR
I infracluded tooth.
S supracluded tooth.

Each tooth was recorded only once, although it may have had several forms of malposition. Crowding and diastemas in the dental arch were separately entered on the record.

The need of prosthetic and surgical treatment was estimated by all three examiners in cooperation, on the basis of entries on records and radiographs. Estimation of the need for prosthetic treatment was based mainly on functional considerations, the cosmetic aspects taking second place. The need was classified as necessary, desirable or subject to consideration. The suggested treatment consisted of crowns, bridges and removable dentures.

The treatment was considered necessary

1. in cases in which teeth were missing to an extent reducing the function of the masticatory apparatus.

2. in cases in which postponement of prosthetic treatment would considerably impair its result,

3. in cases in which an incisor or a canine was missing or fractured or there was a tooth badly affected by caries and in need of root canal treatment,

4. in cases in which the anterior portion contained a darkened or disfiguring filled tooth, or one replaced with a poor temporary crown.

The treatment was considered desirable

1. in cases in which postponement of prosthetic treatment was not considered to impair its result,

2. in cases in which root canal treatment or apicectomy of a previously filled, weak incisor had to be carried out,

3. in cases in which the first molar with root canals that could be treated was too carious to be repaired by an amalgam filling.

Treatment was subject to consideration

1. in cases in which the possible supports of a bridge had already moved or were too much inclined,

2. in cases in which one premolar or molar was missing.

The need for the surgical treatment of periapical osteitis, cysts and impacted teeth was determined from radiographs. In the molar portion, extraction was considered indicated in cases of osteitis or a cyst in which the focus was so extensive that root canal treatment or apicectomy was not advisiable. In osteitis of the molars, attention was also devoted to the anatomy of root canals before deciding on the surgery to be carried out.

Table II

Gingival and plaque indices, the incidence of calculus and alveolar bone resorption in the complete series

GI		PI I		Calculus			Alveolar bone resorption *)		
				+		—	+		—
$\bar{x}$	0.62	$\bar{x}$	0.87	210	(53.3 %)	184	195	(56 %)	153
s	0.35	s	0.30						

*) 348 students

RESULTS

The periodontal condition of the students is shown in Tables II—IV. Dental calculus was seen in more than half the students. Resorption of the alveolar bone was also recorded in more than half the series; it could be measured by means of the bite-wing radiographs (Table II). When the error of the method in GI was corrected and when the classification mentioned under Material and Methods was applied to the results, it was found that 74.6 per cent had gingivitis. The groups of healthy gingivas and severe gingivitis were almost equal, 13.2 and 12.2 per cent (Table III). The oral hygiene of 10.4 per cent was good, of about half the series moderate, and in no less than 37.3 per cent it was poor (Table III).

The series was divided into two groups according to the bone loss recorded. In Group A, resorption of the alveolar bone caused by dental calculus or the plaque alone was present in not more one tooth. In Group B, it was noted

Tabel III

The distribution of the students according to the gingival conditions and the oral hygiene

GI	Healthy 0.00—0.19	Gingivitis 0.20—0.99	Severe gingivitis 1.00—
	52 (13.2 %)	294 (74.6 %)	48 (12.2 %)
PI I	Good 0.00—0.39	Moderate 0.40—0.99	Poor 1.00—
	41 (10.4 %)	206 (52.3 %)	147 (37.3 %)

Table IV

The incidence of alveolar bone loss in connection with various possibilities of plaque retention

The factor affecting the retention of the plaque	Group A			Group B		
	Teeth	%	Individuals	Teeth	%	Individuals
Approximal caries	50	16.1	35	23	8.9	12
Filling and crown overhangs	131	42.3	73	25	9.7	14
Poor contact	18	5.8	16	5	1.9	3
Tipped or elongated teeth	69	22.3	44	4	1.5	3
Calculus or plaque alone	42	13.6	42	202	78.0	49
Total	310	100	210	259	100	81

Group A. Bone loss due to plaque alone or dental calculus in not more than one tooth.
Group B. Bone loss due to plaque alone or dental calculus in two or more teeth.

in two or more teeth. Considerable differences were noted in the distribution of the factors affecting the retention of the plaque. In Group A (bone loss due to plaque alone or dental calculus in not more than one tooth) resorption caused by filling overhangs was seen in 42 per cent, against only 9.7 per cent in Group B. In Group B bone loss due to dental calculus or plaque alone was recorded in an average of four teeth per person.

Two students were found to have acute superficial gingivitis.

A study of the correlations (Table V) between the different variables showed the expected positive correlation between the gingival and plaque indices, and between both GI and Pl I, and dental calculus. Female students showed lower GI and Pl I values than the males. The difference was statistically highly significant (>99.9 per cent). The GI correlated positively with the total number of the carious surfaces and the amount of apprioximal caries in the premolar and molar portion, as did the Pl I, although this correlation was not so marked. On the other hand, there was no correlation between the filled teeth and surfaces or the number of malpositioned teeth, and the GI or Pl I.

The distribution into Angle's classes is presented in Table VI. Ideal occlusions, i.e. the cases of Angle's Class I with no extracted or malpositioned teeth, numbered 28 (7.1 per cent). Table VII presents the malpositions of individuaj teeth. The cases with no malpositioned teeth, those with 1—9 malpositioned teeth, and those with 10 or more malpositioned teeth are listed separately. The dental arch was found to be crowded in 86 of the 306 students

Table V

The correlation coefficients between the GI- and Pl I-indices and other variables

	GI	PL I
GI	0.100000E 01	0.624395E 00
PL I	0.624403E 00	0.100000E 00
Sex (M = 0; F = 1)	—0.257850E 00	—0.294465E 00
DMFS+Rtg^{DMFS}	0.157639E 00	0.463529E-01
Number of decayed surfaces	0.338314E 00	0.231625E 00
Number of decayed approximal surfaces	0.279330E 00	0.179336E 00
DT	0.297985E 00	0.204538E 00
FT	—0.270953E-01	0.316451E-01
FS	—0.288498E-01	—0.792474E-01
MT	0.850837E-01	0.316451E-01
Calculus	0.283150E 00	0.198206E 00
Malpositions	0.837981E-01	0.729592E-01

Table VI

Type of occlusion according to Angle
(Determined on the basis of the first molar relationship)

Angle I		Angle II		Angle III	
$s_1t_1v_1$	85	div. I (subdiv. 3)	41	(subdiv. 4)	24
$s_1t_1v_2$	142	div. II (subdiv. 1)	9		
	227 (57.8 %)		50 (12.7 %)		
$s_1t_1v_{1-3}$	30	$s_2t_1v_1$	7		
Open bites	v_3 6				
Total	257 (65.4 %)		57 (14.5 %)		24 (6.1 %)

Table VII

The malpositions of individual teeth

The number of malpositioned teeth per person	Individuals	
0	55 (14.0 %)	
1—9	306 (77.6 %)	Crowding 86 (28.1 %)
		Diastemas 45 (14.7 %)
10 or more	33 (8.4 %)	Crowding 31 (93.9 %)

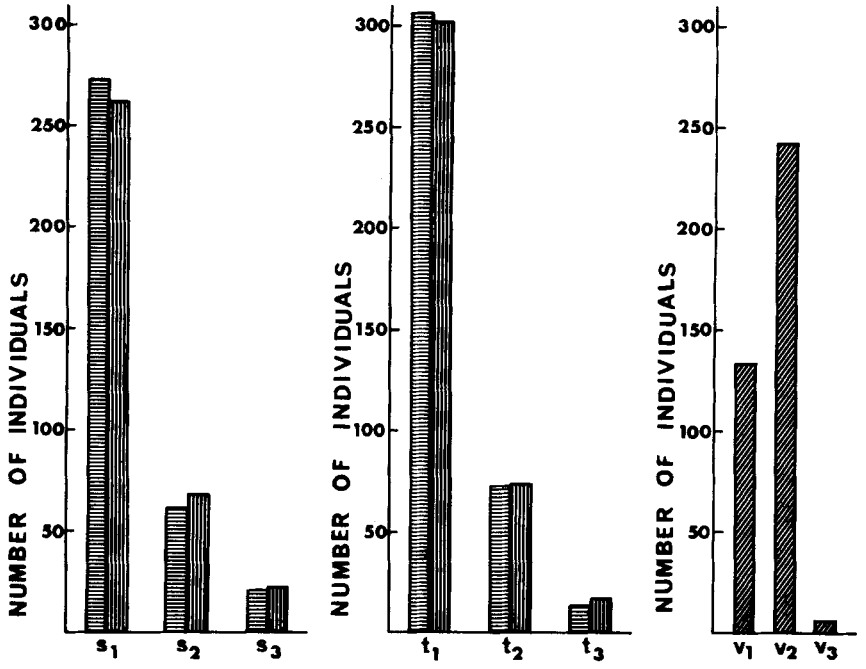

Fig. 1. The incidence of the different types of sagittal occlusion ($s1_1$, s_2, s_3), separately on the right and left sides, and the distribution of the horizontal (t_1, t_2, t_3) and vertical (v_1, v_2, v_3) incisal relationship (≣ right side, |||| left side).

with 1—9 malpositioned teeth. The crowing was most frequent in the mandibular anterior portion.

Fig. 1 presents the incidence of the different types of sagittal occlusion (s_1, s_2 and s_3), separately on the right and left sides, and the distribution of the horizontal and vertical incisal relationship.

Fig. 2 illustrates the number of malpositioned teeth per person. The distribution of the malpositions according to different sagittal types is shown in Fig. 3, with corresponding percentage distributions in Fig. 4 a & b.

Table VIII shows the distribution of cases needing prosthetic treatment into »necessary», »desirable» and »subject to consideration», according to the criteria mentioned under Material and Methods. The estimate revealed that a number of the students required more than one prosthetic appliance. Where the student's therapeutic needs were of different degrees of urgency, he was classified according to the most urgent need.

Twenty seven students already had prosthetic appliances to replace missing teeth.

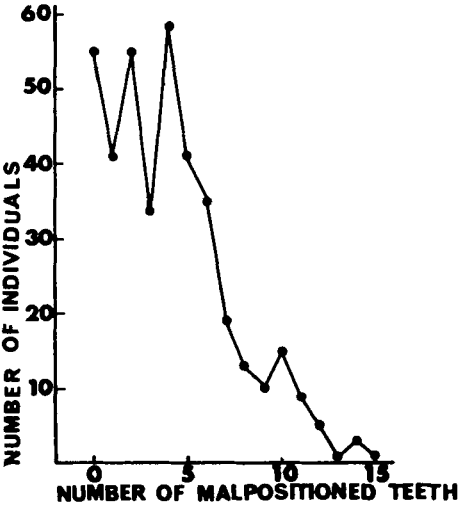

Fig. 2. The number of malpositioned teeth per person.

The average number of teeth extracted or to be extracted per student was 1.14 (Table IX).

Examination for the need of surgical treatment revealed no tumours. Surgical treatment therefore comprised only extractions, apicectomies and surgical extractions, whereas the therapeutic needs of the investing and supporting tissues wered referred to the periodontal section of this paper. The distribution of the surgical measures is shown in Table X.

Table VIII

The need of prosthetic treatment

	Crowns				Fixed bridges				Removable		
	1	2	3	total	1	2	3	total	1	2	total
Necessary appliances, total 44 (42 students)	2	2	1	9	13	2	—	17	14	2	18
Desirable appliances, total 65 (45 students)	5	3	—	11	27	5	1	40	6	4	14
Appliances subject to consideration, total 74 (44 students)	9	2	—	13	40	6	2	58	3	—	3

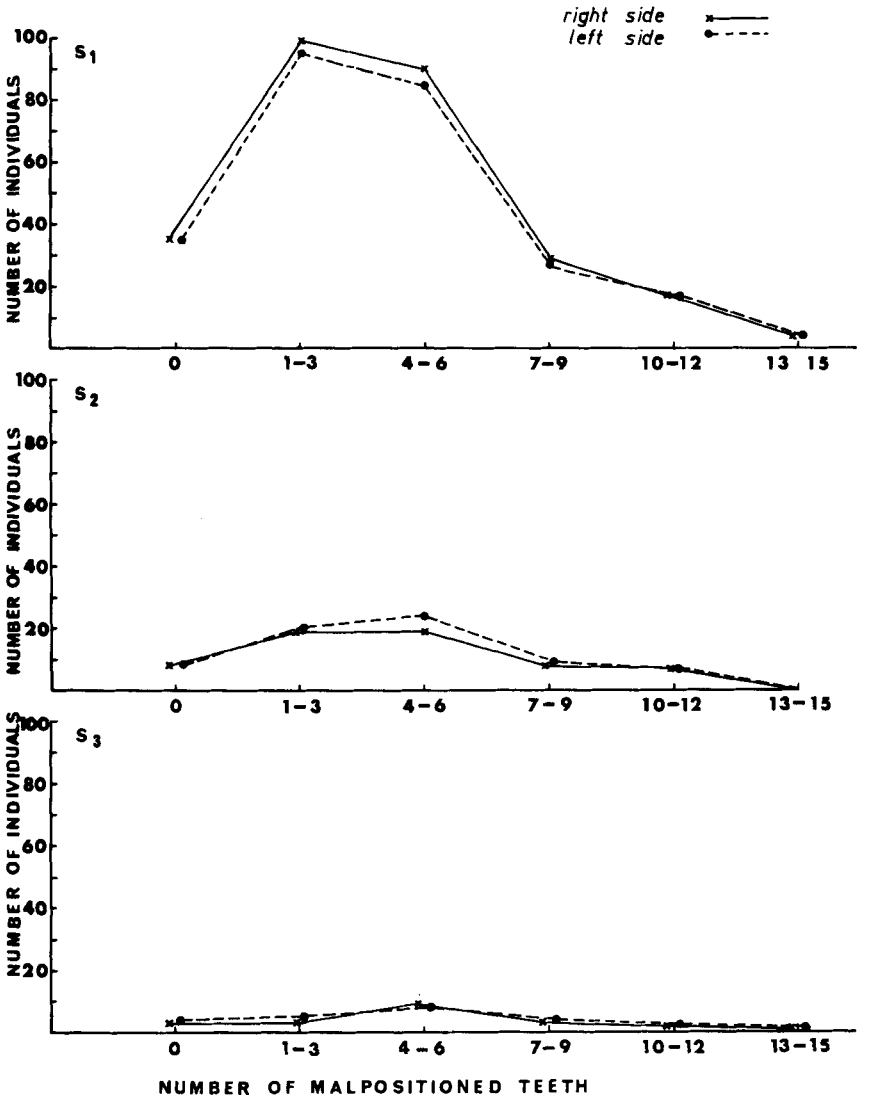

Fig. 3. The distribution of malpositions according to different sagittal types.

Twenty one students required both extraction and surgery, 5 both apicectomy and surgical extraction, and 2 two separate apicectomies each. The summary also discloses that here were 15 apicectomies of one tooth each, 8 of two teeth each, and that two teeth of 39 students and 3 teeth of one

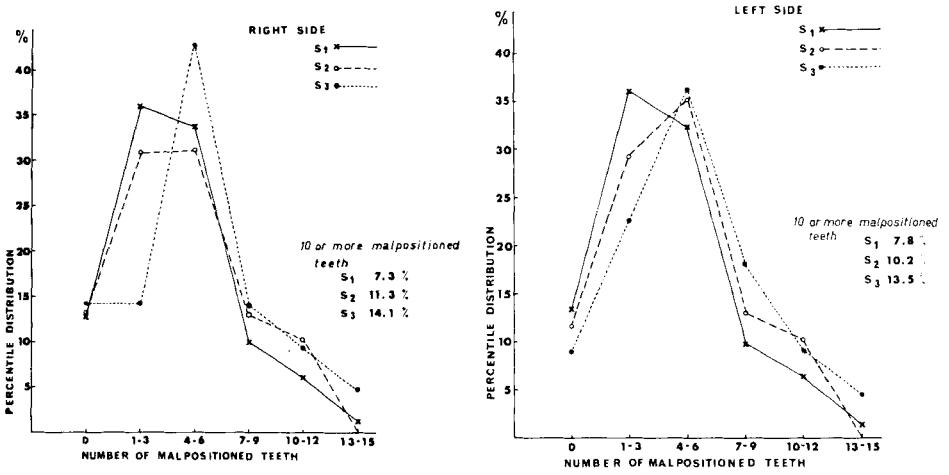

Fig. 4a, b. The percentage distribution of malpositional teeth in different sagittal occlusions, a. right side, b. left side.

student required surgical removal. All the teeth extracted surgically were wisdom teeth, including 3 in the maxilla. The incidence of wisdom teeth is presented in Table XI. The erupted include also the partially erupted wisdom teeth.

Table IX

The number of missed teeth

Extracted teeth	376	$\bar{x}$ 0.95
Teeth to be extracted (no third molars)	75	$\bar{x}$ 0.19
Total	451	$\bar{x}$ 1.14

Table X

The need of surgical measures

	Surgical measures per student					Surgical measures	Students
	1	2	3	4	5	total	total
Extractions	76	14	4	3	2	138	99
Apicectomies	15	8	—	—	—	23	21
Surgical extractions	51	39	1	—	—	132	91

Table XI

The incidence of third molars

	The number of third molars per student						
	0	1	2	3	4		
Erupted third molars	96	45	79	65	109	$\bar{x}$ 2.11	s 1.53
Extracted third molars	351	19	15	7	2	$\bar{x}$ 0.19	s 0.63

Since a very low percentage of the invited students attended the dental examinations, and some had to be re-invited before they attended, the possible difference between the GIs of those attending after the first invitation and those attending after re-ivaitation was studied. It was found that the difference was not statistically significant.

DISCUSSION

The Pl I — mean value 0.87 — of the present study can be considered low. A contributory factor was, perhaps, that the examinations were carried out in the evening, and it had therefore been possible for the students to brush their teeth before arriving. Another contributory factor may have been inadequaet drying of the area examined, which makes it easy for the plaque to escape visual inspection.

The recording of dental calculus was subjective: the three examining dentists had found calculus in 85, 88 and 37 students, respectively, although the total numbers examined were approximately the same (± 3). In the examination of the resorption of alveolar bone the share of the dental calculus may therefore exceed the recorded figure.

The incidence of bone loss in connection with various possibilities of plaque retention (Table IV) distinctly suggests that some individuals have a tendency to resorption of alveolar bone. This manifested itself especially in that bone loss caused by plaque alone or dental calculus was found in an average of four teeth per person in the group with bone loss in more than one tooth.

No correlation was found between malpositioned teeth and GI or Pl I. This may be partly due to the fact that the GI and Pl I were determined on only six teeth per patient. Nor was there any correlation between GI or Pl I and filled teeth and surfaces, although nearly a third of the students (106 out of 348) showed resorption of alveolar bone in connection with filling overhangs and poor contacts. This prompts the assumption that changes caused

by fillings in the supporting tissues develop more slowly and give less symptoms than e.g. those caused by carious lesions on approximal surfaces.

The need for periodontal treatment was estimated on the basis of the degree of oral hygiene and prophylactic measures. Dental care today should devote more attention to prophylaxis, and in estimating the need for treatment this should be taken into account. Therefore time was reserved for informing every student of the importance and role of oral hygiene and for instruction in brushing the teeth. Particularly in the age group 18—25 years this instruction is of great importance since the development of periodontitis can be prevented and the progress of a possible periodontitis can be arrested by treating gingivitis. At the same time the situation is improved from a caries-preventive aspect. It can also be expected that instructions given to students on the subject may be disseminated. On the other hand, all operative procedures, including fillings and crowns, must be carried out with a view to minimizing plaque retention.

The time required for treatment was calculated reserving 20 minutes, in the group with the best oral hygiene (Pl I 0.00—0.19), per student for motivation and brushing instruction. In the next group of oral hygiene (Pl I 0.20—0.99), one hour was reserved for removal of plaque and calculus as well as for motivation, instruction and control of a proper home care. The third group comprised the students with the poorets oral hygiene (Pl I 1.00—). The time reserved for treatment and instruction per student in this group was 1 hour 20 minutes. Removal of filling overhangs was included in the total time of periodontal treatment, 63 minutes per student. In some of these cases, naturally, the filling had to be renewed and was consequently included in the first part of this study.

The need for orthodontic treatment was obvious among the students. According to a conservative estimate, including only the patients with a minimum of 10 malpositioned teeth or open-bite malocclusion, 39 students, 10 per cent of the total number, needed orthodontic treatment.

When the students with 1—9 malpositioned teeth and a crowding of the dental arches, were included, 125 students, 31.7 per cent of the total, needed orthodontic treatment.

At present there are still students who have had no dental care while at school, and consequently the number of cases requiring orthodontic treatment is high. In the future, it may be expected that malocclusions in most cases will be prevented by preventive orthodontics, and the actual treatment can be properly carried out at an age more favourable for successful treatment. In countries where orthodontic treatment is available the tendency seems to be to have even minor malpositions corrected.

The time for each case requiring treatment was estimated at 5 hours. The total time for the treatment of 39 students amounted to 195 hours, and the mean time of treatment per student of the total series was 30 minutes. If treatment had been extended to cover all the 125 students specified above, the total time of treatment would have been 625 hours, average per every student of the series 1 hour 35 minutes.

When 1 hour 20 min. was reserved per single crowns and for removable dentures and 4 hours per fixed bridges, the total time for cases requiring necessary treatment was 104 hours and the mean per student 11 minutes. When desirable treatment was also included in the time, the total amounted to 297 hours 20 min., mean per student 28 minutes.

A large proportion of the need for surgical treatment was represented by surgical extractions of wisdom teeth. Presumably a number of the wisdom teeth which on the basis of radiographs were thought to require surgical removal, can in fact be extracted without operation, or the circumstances of their eruption may change if conditions in the relevant half of the jaw are altered. In some cases where teeth were estimated to need apicectomy, conservative treatment alone may prove adequate. These cases, however, may be counterbalanced by corresponding failures of conservative treatment. In calculating the time required for treatment 20 min. was allowed for extraction and 70 min. for surgery and postoperative therapy. The total time of treatment obtained was 226 hours 50 min. and mean per student 35 minutes.

University students were found to need treatment in all branches of dentistry. The total time of treatment per student was calculated, including operative and endodontic treatment, at 7 hours 17 min. according to the following:

Operative and endodontic treatment	4 hrs 58 min.
Periodontal treatment	1 hr 3 min.
Orthodontic treatment	30 min.
Prosthetic treatment	11 min.
Dental surgery	35 min.

This, however, is an extremely conservative estimate, especially concerning orthodontic and prosthetic treatment. When the cases following next in the order of importance of their orthodontic and prosthetic treatment were included, the mean time of treatment increased to 8 hours 39 minutes.

No prophylaxis was discussed above in connection with caries. Some forms of prophylaxis were mentioned in the section on periodontal treatment, since oral hygiene is of equal importance in the prophylaxis of both caries an periodontal diseases. For caries, the resistance of the enamel should be

increased as well, and the patient's dietary habits improved. The former might be helped by dental care at home with fluoride solutions, fluoride gels or toothpastes, while the latter should be incorporated in the general instructions given to the patient. The time reserved for instruction should in that case be increased.

Prophylaxis is of prime importance in the dental services of the Students' Health Foundation. Comparisons with earlier investigations (*Rantanen*, 1961 a, b; *Gummerus-Rytkölä*, 1965), admittedly restricted to caries and the frequency of extractions, revealed that, in the 1960s, the condition of students' teeth had deteriorated.

SUMMARY

Section II of the study of the need for dental treatment among university students in Turku analysed the need and role of periodontal, orthodontic, prosthetic and surgical treatment in dental care. The series consisted of the same 394 first-year students of 1966 as that of Section I of the study. By clinical and radiographic examinations the need for treatment in the above fields of dental therapy was found to be as follows.

In periodontal treatment, the importance of improving oral hygiene was obvious, whereas other measures were restricted to the removal of dental plaque and calculus and elimination of plaque retentions. 31.7 per cent of the students needed orthodontic treatment. The need of prosthetic treatment was divided into necessary, desirable and subject to consideration, and the first two groups were taken into account when the total need for treatment was estimated. Most of the surgical treatment needed, consisted of extraction of impacted wisdom teeth. No neoplasias or other oral diseases were recorded. The total time of treatment per student, including the time required for operative and endodontic treatments, was estimated at 8 hours 39 minutes.

RÉSUMÉ

ÉTAT DENTAIRE ET BESOINS EN TRAITEMENTS DENTAIRES PARMI LES ÉTUDIANTS DE L'UNIVERSITÉS DE TURKU

II. TRAITEMENTS PARODONTAIRES, ORTHODONTIQUES, CHIRURGICAUX, PROTHÉTIQUES ET PROPHYLACTIQUES

Dans cette deuxième partie de leur étude sur les besoins en traitements dentaires parmi les étudiants de l'universités de Turku, les auteurs présentent une anlyse de la place prise par les traitements parodontaires, orthodontiques,

prothétiques et chirurgicaux dans l'ensemble des soins dentaires. Le matériel se composait des 394 étudiants ayant fait leur première année en 1966 qui ont servi pour la première partie de cette étude. Des examens cliniques et radiographiques ont déterminé les besoins en traitements dentaires dans les domaines ci-dessus, mettant en lumière les faits suivants:

En ce qui concerne les traitements parodontaires, l'importance de la nécessité d'une amélioration de l'hygiène bucco-dentaire ressortait nettement, mais les autres mesures pouvaient se borner à une ablation de la plaque microbienne et des dépôts tartreux et à l'élimination des facteurs favorisant la rétention de la plaque microbienne. Un traitement orthodontique était nécessaire chez 31,7 % des étudiants. Pour les besoins en traitements prothétiques, la distinction a été faite entre les soins nécessaires, souhaitables et à envisager, et les deux premiers groups ont été pris en considération dans l'estimation du besoin total en traitements. Les besoins en traitements chirurgicaux concernaient, pour la plupart, des extractions de dents de sagesse incluses. Il n'a pas été enregistré de processus néoplasique ou autres affections de la cavité buccale. La durée totale du traitement, y compris la durée des traitement de dentisterie opératoire et des traitements radiculaires a été estimée à 8 heures 39 minutes par étudiant.

ZUSAMMENFASSUNG

ZUSTAND DES GEBISSES UND NOTWENDIGKEIT DER ZAHNBEHANDLUNG BEI DEN HOCHSCHULSTUDENTEN IN TURKU. II DIE BEHANDLUNG DER PARODONTOPATHIE, REGULIERUNGEN, CHIRURGISCHE UND PROTHETISCHE MASSNAHMEN SOWIE PROPHYLAKTISCHE BEHANDLUNG

Im 2. Teil Untersuchung über die erforderliche Zahnbehandlung bei den Hochschulstudenten in Turku wurden die Notwendigkeit und der Anteil der parodontologischen Massnahmen, Regulierungen und der prothetischen sowie chirurgischen Eingriffe betrachtet. Als Objekt dienten dieselben 394 Studenten, die im Herbst 1966 ihr Studium begonnen hatten, wie im vorigen Teil der Untersuchung. Das Ergebnis der klinischen und Röntgenuntersuchungen war, dass ein Bedarf nach Behandlung auf den obengenannten Gebieten der Zahnheilkunde in Folgender Weise vorlag: Für die Behandlung der Parodontopathie wurde die Wichtigkeit erhöhter Mundhygiene festgestellt, während sich die übrigen Massnahmen auf die Entfernung des Zahnsteins und der des Plaques beschränkten. Eine Notwendigkeit orthodontischer Behandlung lag bei 31,7 % der Studenten vor. Die prothetische Behandlung wurde unterteilt in notwendige, wünschenswerte und solche Ermessen be-

ruhend klassifiziert; bei der Schätzung des Gesamtbedarfs an Behandlung wurden die beiden ersten Gruppen berücksichtigt. Den weitaus grössten Anteil bei der chrirurgischen Behandlung bildete die Entfernung retinierter Weisheitszähne. Eigentliche Neoplasien oder andere Erkrankungen des Mundes wurden nicht festgestellt. Als Gesamtbehandlungszeit ergaben sich bei Beachtung auch der Zeit für Füllungs- und Wurzelbehandlungsmassnahmen 8 Stunden, 39 Minuten pro Studenten.

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