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DENTAL HEALTH RELATED TO ORAL HYGIENE AND ACADEMIC INSTRUCTION IN A GROUP OF DENTAL STUDENTS

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Introduction

FEW investigations into the dental health of university undergraduate students have been undertaken. Heylings (1961), in a survey of Leeds University first year undergraduate students of all departments, investigated some aspects of dental health. In a group of male students about 80 per cent had deposits of calculus on the teeth and 27 per cent had gingivitis. In a similar study Bartholdi (1961) found that in University of Minnesota freshmen almost 50 per cent of teeth examined were affected by caries and less than two per cent of the students had healthy teeth. In the dental literature of the past decade no such investigations have been reported among dental students.

The purpose of this investigation, undertaken in 1962, was to determine whether differences existed between first, fifth and final year dental students in the University of the Witwatersrand as regards dental health, and to relate any differences observed in the oral hygiene and level of academic instruction reached.

Methods and Materials

The concept of dental health includes the health of both the teeth and their supporting and related structures. A healthy tooth may be defined as one free from defects and especially free from caries.

To express caries activity many authors use the Defective, Missing and Filled index. In this study the total number of restorations and new cavities was recorded as it was felt that this index shows the number of affected teeth but not the number of carious lesions.

The health of the supporting structures is reflected by the absence of calculus, pocketing and inflammatory changes of the tissues surrounding the teeth. In this study calculus, pocketing and oedema of the gingivae were recorded as being either present or absent.

Oral hygiene was gauged by eliciting the tooth brushing and other cleansing habits.

The dentitions of all white male students in the first, fifth and final years of study were examined by means of mirror and probe. Any unerupted teeth were regarded as missing.

Results

Of the dental students examined, 51 were in the first year of study, 15 in the fifth year and 19 in the final year.

The maximum, mean and minimum ages of the students in each class examined are summarized in Table 1.

The maximum, mean and minimum number of teeth present per class and the values of some statistical calculations, namely, the standard deviations and Chi squared test are summarized in Table 2.

The number of teeth present per student per class is also presented in histogram form in Fig. 1.

As an indication of the observable caries activity, the total number of lesions as indicated by the means of the total number of restorations and new cavities were recorded for each student. The mean simple, compound, and total restorations, mean number of new cavities and mean total carious lesions per class are summarized in Table 3.

The oral hygiene of the students as assessed by the cleansing habits, profes-

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sional and home care is set out in Tables 4, 5 and 6.

The presence or absence of calculus, pocketing and oedema is indicated in Table 7 and expressed as a percentage of students per class.

DISCUSSION

The mean age of the students increases in keeping with the number of years of study. Thus the mean age of first year students is 18 years, four years later in the fifth year the mean age is 22 years and one year later in the final year the age is 23 years.

The difference between the average number of teeth present in each of the three class groups studied appears at first glance to be insignificant. Statistically, however, the Chi square test shows that there is a significant difference between the number of teeth present in each group ($p < 0 \cdot 1$ per cent).

At the age of 18, when most students enter a university, only some have a full complement of teeth, because in many of them the third molars have not erupted. For this reason all students may be divided into two groups: those having 28 or more teeth and those having a lesser complement. The latter group will include all those who have lost teeth or have unerupted or congenitally missing teeth, other than third molars (Fig. 1).

In the first year class 69 per cent of students belong to the first and 31 per cent to the second group. The members of the latter group probably have lost teeth or a small percentage of them may have unerupted teeth present, other than third molars. Seven per cent of students belonging to this group have 24 or fewer teeth. This loss of teeth may reflect a previous neglect in dental health.

TABLE 1.

Age of Students in Years.

Year of Study	*Maximum*	*Mean*	*Minimum*
1	23·0	18·3	17·0
5	26·0	22·8	21·0
5½	28·0	23·4	22·0

Eighty-six per cent of the fifth year class belong to the first group with 28 or more teeth and only 14 per cent to the second group. This apparent increase in the number of teeth present between first and fifth year students may be explained in two ways. Firstly, their third molars have now erupted; and secondly, the 7 per cent group of first year students having 24 or fewer teeth have been lost. Assuming that the present fifth year class also had a few students with 24 or fewer teeth when they were in the first year of study and that this small group has been lost, one may postulate that a relationship exists between successful dental students and dental health. There is no means of testing this postulate in the present study.

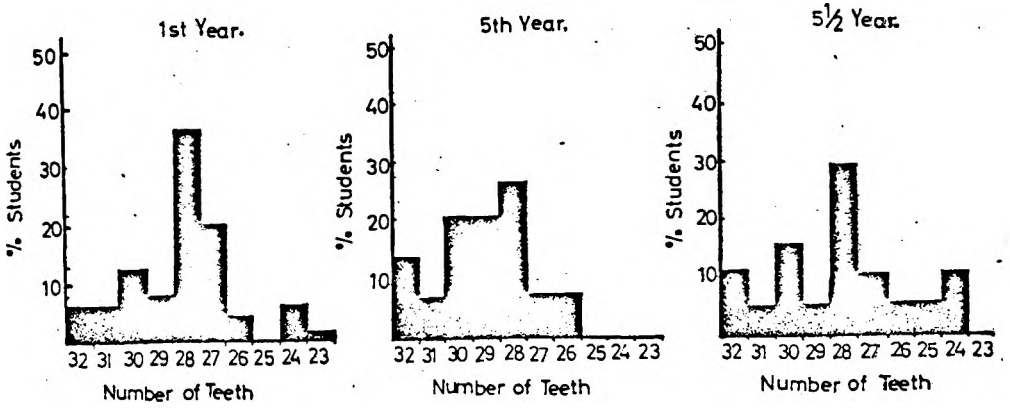


FIGURE 1. Percentage incidence of the number of teeth present in each of the groups studied.

TABLE 2

Number of Teeth Present

Year of Study	*Maximum*	*Mean*	*Minimum*	*S. Dev.*	X^2
1	32·0	28·2	23·0	2·03	
5	32·0	29·1	26·0	1·74	< 0·1%
5½	32·0	28·2	24·0	2·38	

TABLE 3

Mean Carious Lesions as Indicated by Restorations and Cavities.

Year	*Simple Restoration*	*Compound Restoration*	*Total Restorations*	*Cavities*	*Total Lesions*
1	7·1	2·6	9·7	2·6	12·3
5	8·6	4·2	12·8	3·3	16·1
5½	8·1	5·5	13·6	3·2	16·8

TABLE 4

Brushing Habits

Year	*Mean Times Per Day*	*Vertical % Students*	*Rotational % Students*	*Sideways % Students*
1	1·8	44%	16%	40%
5	2·1	80%	20%	0%
5½	2·3	74%	26%	0%

TABLE 5

Use of Accessories (% Students)

Year	*Floss*	*Toothpicks*	*Floss and Toothpicks*	*Neither*
1	9·0%	15·0%	0%	76·0%
5	6·7%	33·3%	13·3%	46·7%
5½	0%	52·6%	5·3%	42·1%

Figure 1 demonstrates that the final year class has a decreased number of teeth present per individual compared with the fifth year class; 70 per cent of students being in the first and 30 per cent in the second group. The decrease in number of teeth however is gradual, there being no isolated groups of students as in the first years. To explain this it is probably correct to state that many final year students lose their third molar teeth during this period.

There is a steady increase in the mean number of carious lesions per student with the years of study.

Table 2 shows that each student on the average has an increase of 0·8 lesions per year. In five years, therefore, dental students on the average gain four new restorations.

Dental health consciousness seems to increase as a dental student progresses in his B.D.S. course, and he attempts to raise the standard of his oral hygiene. Tables 4 and 5 show that there is an increase from first to final year in the number of brushing times per day; better methods of tooth brushing are resorted to and more accessories for cleansing and stimulating the gingival tissues are used. These facts may indicate that there is a progressive increase in the personal or home care of the mouth as the student progresses in his studies.

Although there is an increase in professional care in the final year as compared with the first year, there is a neglect of oral health in the fifth year of study (Tables 6 and 7). This may be explained by the fact that the fifth year student feels an urgency for obtaining the quota of operative work required before being allowed to enter for Part II of the final examinations. Final year students, however, usually have obtained this quota and consequently may spare more time to receiving professional care of their teeth.

TABLE 6.

Check-up Visits to Dentist per Year

Year	*Mean*
1	2·0
5	1·7
5½	2·4

SUMMARY

A survey was carried out on first, fifth and final year dental students in the University of the Witwatersrand in 1962.

The dental health and oral hygiene of the students is assessed in terms of number of teeth present, carious lesions, periodontal conditions and cleansing habits.

An improvement in oral hygiene is noted in fifth and final year students as compared with first year students.

Evidence is produced to suggest that a relationship may exist between successful dental students and dental health.

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TABLE 7

Percentage of Students Showing Calculus Deposits, Oedema and Pocketing

Year	*Calculus*		*Oedema*		*Pocketing*	
	Present	*Absent*	*Present*	*Absent*	*Present*	*Absent*
1	47·1	52·9	27·5	72·5	9·8	90·2
5	60·0	40·0	13·3	86·7	26·7	73·3
5½	21·1	78·9	10·5	89·5	10·5	89·5