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Evian,C., Weinberg, B., Cleaton-Jones, P.1978. What did schoolchildren gain from the Second National Dental Health Week?Journal of the dental association of South Africa;33(7): 369-72

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Journal of the Dental Association of South Africa 33, 369 - 372

What did schoolchildren gain from the Second National Dental Health Week?

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Keywords: Dental education; oral hygiene

SUMMARY

The dental knowledge of 1 706 Std. IV schoolchildren was assessed by means of a questionnaire, before and 6 months after the second National Dental Health Week. There was a slight increase in dental knowledge after the Dental Health Week. Oral hygiene indices (OHI-S) were found to be significantly less in the children examined after Dental Health Week.

OPSOMMING

Die tandheelkundige kennis van 1 706 Std. IV skoolkinders is deur middel van 'n vraelys vóór en 6 maande ná die tweede Nasionale Tandheelkundige Gesondheidsweek bepaal. Daar was 'n geringe verbetering te bespeur ná die Tandheelkundige Gesondheidsweek. Die mondhigiëneindekse (OHI-S) was noemenswaardig laer by die kinders ná die Tandheelkundige Gesondheidsweek.

INTRODUCTION

In 1974 the Dental Association of South Africa embarked on a long-term health education programme to increase the dental awareness of the South African public. This culminates each year in a National Dental Health Week, during which there is a nationwide dissemination of dental knowledge, through schools, the mass media and the dental and allied health professions.

As a result of the generosity of many sponsors the first National Dental Health Week was held with the theme "Teeth for Life", the aim of which was to emphasise that teeth may be retained throughout an individual's lifetime.

The theme for the second National Dental Health Week was a logical sequel to the first namely, "Plaque the Tooth Enemy". This theme was aimed at introducing the public to the major causative factor in dental caries and periodontal disease. Although the public of all ages was to be exposed to the health education facts concerning "Plaque the Tooth Enemy", the main target group was the child at primary school.

The study reported in this paper was undertaken to determine some effects of the Second National Dental Health Week on the dental knowledge of Std. IV schoolchildren.

MATERIALS AND METHODS

The sample studied consisted of Black, Coloured, Indian and White Std. IV schoolchildren attending schools in the Witwatersrand area. Where possible, schools were selected serving the upper, middle and lower socio-economic groups and all the Std. IV children, present in each school at the time of the study, participated.

The main part of the study required the children to complete a questionnaire of 19 questions (Appendix 1). Fifteen of these questions concerned various aspects of dental knowledge while 4 related to the oral hygiene practices of each child. Each question had 5 possible answers, one of which was correct, and the children were requested to mark only the correct answer on computer cards. The questionnaire was completed between 2 and 4 weeks before National Dental Health Week.

The dental education material during National Dental Health Week consisted of

1. A poster symbolically indicating "plaque the tooth enemy".
2. A series of model lessons in booklet form, in English and Afrikaans, to aid teachers to explain the basic principles of dental caries,

periodontal disease and measures to prevent them.

Both these items were sent to every class of every primary school in the country to ensure that all pupils would be exposed to the material.

3. A slide/tape series was made available to 500 dentists throughout South Africa, who visited as many schools as possible to address teachers during the health week.

Six months after National Dental Health Week children in Std. IV in the same schools completed the same questionnaire. A dental knowledge score for each child was calculated by adding together the correct answers for the first 15 questions and expressing this as a percentage of the 15 possible correct answers. The answers to the 4 oral hygiene questions did not relate to dental knowledge and will be reported elsewhere.

At the same time as the questionnaires were completed the simplified oral hygiene index (OHI-S) of Greene and Vermillion (1964) was determined for as many children in each school as possible; it was not possible to examine all the children due to a limitation on the amount of time allowed by the schools for this study. The OHI-S indices were completed by a single observer (B.W.).

All data was recorded on computer cards and analysed in an I.B.M. 370/158 computer using the Statistical Package for the Social Sciences (Nie *et al* 1975).

RESULTS

A total of 1 706 children participated in the study before National Dental Health Week and 1 702 afterwards. The numbers within each racial subgroup varied at the two stages of the study. The National Dental Health Week was held in September and the questionnaires completed 6 months later, in March. It proved not possible, for a variety of reasons, to re-examine the children who had completed the first questionnaire and who would have been in Std. V. Thus the two groups examined comprised different children but all had been exposed to the same educational material.

The mean dental knowledge scores are listed in Table I. Before National Dental Health Week (NDHW) the highest scores were found in upper class white English-speaking children and the lowest in the black children. After NDHW upper class white, English-speaking children had the highest score. The overall ranking in descending order, both before and after NDHW, was white English-speakers, white Afrikaans-speakers, Coloureds, Indians and Blacks. All these groups differed significantly from each other at the 0,1 percent level.

Within the white groups there were representatives of each of the socio-economic groups. Middle class English-speakers had higher scores than the upper and lower groups, while among the Afrikaans-speakers the order was upper, middle and lower class. After NDHW the rank order within the English-speakers changed, the upper class group now had the highest scores.

When the dental knowledge scores before and after NDHW were compared within the same groups there were reductions in scores in the white Afrikaans upper class, white Afrikaans lower class and white English middle class groups. The latter reduction was statistically significant ($p < 0,01$). In all the other groups there were increases in dental knowledge scores. The increases in dental knowledge scores were statistically significant in the white English upper class group ($p < 0,001$) and the Indian group ($p < 0,001$).

Table II lists the mean OHI-S scores in those children examined before and after NDHW. The OHI-S scores before NDHW were highest in the Indian and Black groups followed by the Coloureds and whites. Much the same order was present after NDHW. In every group there was a highly significant reduction ($p < 0,001$).

DISCUSSION

The findings in this study have demonstrated that there was a very slight increase in dental knowledge in two groups of children examined before and after a dental education campaign.

Recently Addy and Edmunds (1977) examined the effectiveness of methods of teaching dental health to 9 - 10 year-old schoolchildren in the United Kingdom. The same group of children was assessed before a dental education campaign, immediately after, one week after and then three months after the campaign. They reported a negligible increase in dental knowledge three months after a campaign using poster and written

Table I. Dental knowledge scores in percentages

Group	Social Class	Before NDHW		After NDHW		Change	t
		n	x S.D.	n	x S.D.		
White-Afrikaans	Upper	262	60,7 ± 13,1	283	60,5 ± 12,7	−0,2	0,18
	Middle	241	56,2 ± 14,0	261	57,1 ± 12,7	+0,9	0,75
	Lower	261	47,7 ± 14,4	393	45,4 ± 16,3	−2,3	1,85
White-English	Upper	550	64,1 ± 15,3	514	67,0 ± 14,7	+2,9	3,20**
	Middle	153	68,5 ± 14,0	82	62,9 ± 18,3	−5,6	2,62*
	Lower	47	46,4 ± 17,2	56	50,1 ± 14,1	+3,7	1,20
Coloured	Middle	117	45,9 ± 13,6	118	47,4 ± 16,9	+1,5	0,74
Indian	Lower	129	34,7 ± 13,9	188	39,3 ± 14,1	+4,6	2,85**
Black	Lower	375	22,1 ± 11,2	280	23,4 ± 10,7	+1,3	1,50

*$p < 0,01$ **$p < 0,001$

Table II. Oral Hygiene Scores (OHI-S)

Group	Social Class	Before NDHW		After NDHW		Change	t
		n	$\bar{x}$ S.D	n	$\bar{x}$ S.D.		
White-Afrikaans	Upper	187	4,4 ± 1,5	187	1,6 ± 1,2	−2,8	19,78**
	Middle	171	4,1 ± 1,6	159	2,2 ± 1,4	−1,9	11,49**
	Lower	261	4,5 ± 1,6	388	3,1 ± 1,5	−1,4	11,66**
White-English	Upper	389	4,3 ± 1,7	326	2,2 ± 1,3	−2,1	18,64**
	Lower	47	4,5 ± 1,7	56	2,9 ± 1,4	−1,6	5,06**
Coloured	Middle	117	4,8 ± 1,2	118	3,3 ± 1,2	−1,5	9,52**
Indian	Lower	129	5,5 ± 1,0	188	3,7 ± 1,2	−1,8	14,3**
Black	Lower	375	5,3 ± 1,1	280	3,2 ± 1,5	−2,1	20,5 **

* $P<0.01$ ** $P<0.001$

material of similar type to the South African National Dental Health Week.

Our findings in children of approximately similar ages, are in agreement with those of Addy and Edmunds (1977). It must be mentioned however that because two different groups of children were examined it cannot be excluded that differences in dental knowledge were the result of inherent differences between the two groups. More details on individual answers to questions will be given in a subsequent paper but the differences between the racial groups might be related to levels of sophistication and different cultural values.

A gratifying observation was the statistically significant lower OHS-I scores in the children examined after National Dental Health Week. While it must be stated that this could have resulted from inherent differences between the two groups, this is an unlikely explanation. The improvement in oral hygiene seen is similar to that reported in Dundee, Scotland by Finlayson and Wilson (1961).

The authors believe that the sample of children examined are representative of the general population in South Africa and that the findings in this study are a reasonable guide to the effect of National Dental Health Week on the primary schoolchild.

It is concluded that the initial aims of the second National Dental Health Week were realized.

ACKNOWLEDGEMENTS

The authors would like to express their sincere thanks to the Dental Association of South Africa, all the many sponsors of the Second National Dental Health Week, the headmasters, teachers and pupils, Mr. P. Golden of the Computer Centre, University of the Witwatersrand, to all those who made this study possible and to Mrs. H. Ball for typing the manuscript.

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