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Mobile phone reminder as a tool in maintaining good oral health status of Iraqi students

Dr. Kadhim Jawad B.D.S MSc. Periodontology*

Abstract

Improving the oral health status through out a group directed periodontal health educational programs was and still as one of the most applied strategies in field of dental and periodontal disease prevention. Eighty systemically fit undergraduate dental students were randomly chosen and allocated into two groups (control and experimental). A two-lecture educational program was carried out for both groups, but Students in the experimental group were instructed to use their mobile phone reminder to remind them the time of performing oral hygiene practice. Results of this research clearly reflect the proposed positive effect of the educational program on the oral health status of the participant and highly significant improvement was recorded for those who use the mobile reminder.

Key words: Periodontal health. Educational programs. Oral health status. Prevention.

Introduction

Creating and maintaining of good periodontal health status has been clearly distinguished as the primary goal of self performed oral hygiene practice⁽¹⁾. To achieve this goal a large number of measures have been introduced and tested for their reliability and efficiency in creating and maintaining a good oral hygiene level⁽²⁻⁵⁾.

The correct and efficient uses of these measures need to be preceded by thorough instructions and continuous periodontal health education to insure that these measures being used properly and continuously⁽⁶⁻⁷⁾. The correct and continuous using of these oral hygiene measures not only important for obtaining good oral hygiene but also very important in promoting the resultant healthy status.

Periodontal health educational programs usually aimed at providing a scientific knowledge that create an attitude toward obtaining and maintaining of an acceptable level of oral health status. Such attitude seems to be translated into a positive oral hygiene behavior. This (knowledge – Attitude – behavior) model was extensively used in periodontology to provide and promote an acceptable level of oral hygiene⁽⁸⁻¹²⁾.

Improving the oral health status through out a group directed periodontal health educational programs was and still as one of the most applied strategies in field of dental and periodontal disease prevention, because it can easily reach a large number of population and can gap the progressively enlarged shortage in the required dental man power and financial resources especially in the developing countries

* Lecturer in Department of Periodontology, College of Dentistry, Al-Mustansyria University.

(13- 17). The well known problem of dental health education can simply explained by the fact that the provided information was always being forgotten by most of participants after a short period of time. Moreover and by passing of time most of the participants will find the oral health practice as a very boring action and gradually lose their attitude toward performing such action on regular and continuous bases. This fact always lies under the short term effect of dental health education ⁽¹⁸⁾ which is a well known problem to all dental health educators and all workers in this field of dentistry. So it is clear evidence that this problem will deteriorate the expected results from the proposed periodontal health educational programs.

Attempts to prolong the short term effect of dental and periodontal health educational programs were extensively tried, but wide controversial results were obtained.

The aim of the present study is to estimate the effect of a program based on using of mobile phone reminder to insure a continuous performing of oral cleanliness that hopefully reflected as a continuously improved oral hygiene level.

Materials and methods

Eighty systemically fit undergraduate dental students were randomly chosen and allocated into two groups (experimental and control). Each group includes forty students (20 males & 20 females).

A two-lecture educational program was carried out for both groups. These lectures included basic information about the clinical aspects and prevention of periodontal disease. The program also included instructions and demonstrations in using of different types of oral hygiene measures. All the

participants in both groups were instructed to perform tooth brushing and flossing once a day.

Students in the experimental group were instructed to use their mobile phone reminder to ensure their cooperation in a continuous performing of oral hygiene practice, while such instructions were not provided for students in the control group.

Two clinical examinations for Gingival index & Plaque index were carried out in this study. The first examination was done before starting the educational program and the second one was four months after conduction of the program. The examined teeth were selected according to the CPITN alternative II. The clinical examinations were carried out in the teaching hospital at the periodontal clinics by well trained and calibrated dentists.

Data were collected and analyzed by suitable statistical methods including both analytic and descriptive means as t-significant comparative test, tables and bar charts.

Results

Plaque index mean scores were recorded a significant reduction in their values for the participants in the control group after carrying out of the program (from 1.67 to 1.4 among females & from 1.775 to 1.48 among males). (Fig 1) For the participants in the research group a comparable reduction in plaque index mean scores was recorded (from 1.66 to 0.43 among females & from 1.655 to 0.56 among males). (Fig2). These changes were found to be highly significant in comparison with values recorded before conduction of the program. (Table 2)

Gingival index mean scores recorded for the participants of the control group before and after carrying

out of the program give a slightly different figure from that recorded for the plaque index, here the reduction in the gingival index mean scores were found to be non significant among both genders of the control group (from 1.585 to 1.46 among females & from 1.605 to 1.465 among males). (Fig 3)

On the other hand an observable reduction in the gingival index means scores were recorded among the participants of the research group for both genders (from 1.66 to 0.43 among females & from 1.655 to 0.56 among males). (Fig 4). Again these changes were found to be highly significant in comparison with the values recorded before carrying out of the program. (Table 3). In general the results of this research indicated that participants in both groups had got a benefit, but this benefit was greater among participants of the research group than that of the control group.

Discussion

It is an agreeable thing that high technology nowadays has clearly impressed our life in its all aspects. The wide range use of high technology in modern life can be simply attributed to the helpful and uncomplicated usage of these technologies in addition to their low cost compared to their great benefits.

Mobiles and cellular phones as one aspect of this high technology no longer been used as a communication mean only, but also as a calendar, calculator, camera, note book, recorder and also as a reminder.

Trying to get a benefit from the last point in improving and maintaining good oral hygiene should not be overlooked especially in our community where the financial and other technical facilities are limited or restricted.

This study may be considered as a path finder in this direction to explore the probability of incorporating of these widely distributed devices in the ensuring of the required full cooperation of individuals to continue their long life boring oral hygiene measures.

Results of this research clearly reflect the proposed positive effect of the educational program on the oral health status of the participants in both groups; however certain points need to be discussed:

1- This study mainly depends on the idea of incorporation of a new element to prolong the effect of an educational program rather than a comparison between two different educational programs. This fact may provide a good explanation for certain results such as the significant improvement that achieved among the participants in the **control group**. In other word the oral health status of the participants in the **control group** were **improved** in part due to certain elements of the educational program (instructions and lectures) they received through out conduction of the program and these findings came to support the understandable and agreeable fact of positive effect of the education and instruction on the oral hygiene. While the **highly significant improvement** that achieved in the experimental group can be attributed to the **continuous reminding effect of the mobile phone**.

2- Differences in the improvement between the plaque and gingival index scores at the control group may be explained by the fact that application of oral hygiene measures may be first reflected on plaque index rather than gingival index that need a longer period of time for the observable improvement to be reflected clinically.

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Table (1) Distribution of the population sample

Gender	Control		Experimental		Total
	Female	Male	Female	Male	
	20	20	20	20	
Total	40		40		80

Table (2) Plaque index means before and after the program

	Control		Experimental	
	Female	Male	Female	Male
Before	1.67	1.775	1.66	1.655
After	1.4	1.48	0.43	0.56
SD	0.44851	0.42355	0.35109	0.38317
significance	S	S	H.S	H.S

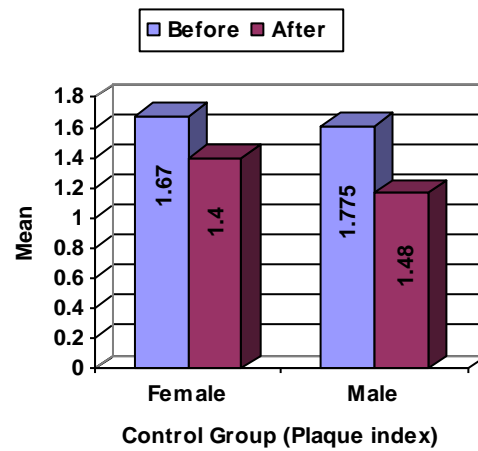
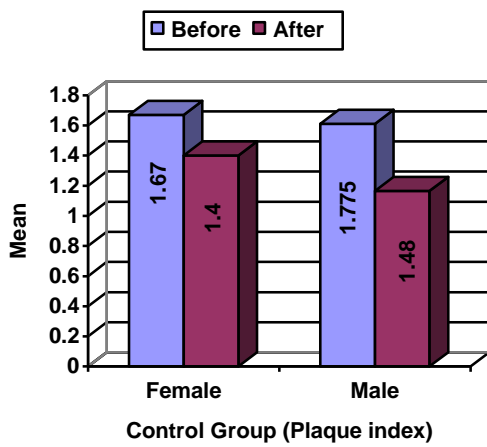


Table (3) Gingival index means before and after the program

	Control		Experimental	
	Female	Male	Female	Male
Before	1.585	1.605	1.51	1.52
After	1.46	1.465	.375	.510
SD	0.28261	0.47061	0.34834	0.46893
significance	N.S	N.S	H.S	H.S

