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Oral hygiene instructions provided by dental hygienists: Results from a self-report cohort study and a suggested protocol for oral hygiene education

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Objective: To investigate the extent to which dental hygienists target their efforts toward patients' oral hygiene instruction. **Method and Materials:** A population of 179 dental hygienists who attended an annual meeting were given a structured anonymous questionnaire to assess information regarding their habits of instructing patients about oral hygiene measures. **Results:** The dental hygienists were females aged 21 to 68 years (mean age 39.05 ± 18.18); 49.7% worked in private practice, 21.7% in public practice, and 28.57% in both. Overall, 70.9% reported that they provided oral hygiene instruction to all their patients; 28.5% to most of their patients; and 0.6% reported that they never provided oral hygiene instruction. Among the participants, 54.5% reported giving instruction at every treatment, 41% at every periodic treatment, and 4.5% only on first meeting. The reasons for not instructing their patients included: lack of time (21.7%), the patients know how to brush (61.5%), and the patient appears uninterested (23.6%). Most of the participants (77.7%) reported giving the same hygiene instructions for patients at high and low risk for caries and/or periodontal disease. **Conclusion:** Participants did not use enough demonstration methods in order to improve their patients' performance. Dental hygienists should pay more attention to instruction and education regarding oral hygiene preventive measures. Dental practitioners employing hygienists should encourage oral hygiene instruction programs in their clinics. Those programs should include repetitious demonstrations and reinforcement in order to improve overall outcome and prevention of future disease. *(Quintessence Int 2014;45:265–269; doi: 10.3290/j.qi.a31213)*

Key words: brushing, instruction, interproximal brush, prevention, rinsing, toothpaste, toothpick

Meticulous plaque removal at home on a daily basis plays a vital role in prevention of caries as well as gingival and periodontal diseases.[1,2] Unfortunately these tasks are difficult to perform; most adults and children brush their teeth inadequately[3-5] and fail to comply with other preventive measures.[6,7]

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Deficiencies in personal performance of correct oral hygiene are largely influenced not only by lack of compliance, but also by lack of individual dexterity.[8] In a study performed by de la Rosa et al,[9] a considerable number of individuals remove only 50% of the bacterial plaque even after brushing for the recommended 2 minutes.

Therefore, compliance for performance of effective oral hygiene would be dependent primarily upon correct instruction of the methods, teaching one skill at a time (tooth brushing, using dental floss or toothpick), demonstration, and practice under supervision by the dental hygienist and/or the dentist. Since deterioration

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in the performance of oral hygiene with time has been observed in several clinical studies,[4,5] detailed evaluation and reinforcement of patients at follow-up appointments is important to highlight specific toothbrushing problems, follow progress, and improve weak points in their performance.

Repeated sessions with oral hygiene instruction, demonstration, supervised practice, and positive and negative reinforcement should become an integral part of the patient's individually tailored educational program.[7]

This study was undertaken to evaluate respectively the preventive instruction provided by dental hygienists and to investigate the extent to which they targeted their efforts toward patients' guidance and education.

METHOD AND MATERIALS

Study population

A cross-sectional survey of dental hygienists was carried out during the 2012 national meeting of the Israel Society of Dental Hygienists. All dental hygienists who arrived at the convention were asked to complete an anonymous structured questionnaire. The study included all dental hygienists who attended the annual meeting and completed the questionnaire.

Questionnaire

A structured questionnaire was designed by the authors to assess demographic characteristics of the dental hygienists as well as the extent to which they targeted their efforts toward their patients' guidance and education.

Questionnaires were used to collect information on the preventive care activities of dental hygienists, and recorded information regarding age, seniority, and their habits in instructing their patients about oral hygiene measures.

Dental hygienists were asked to report:

- whether they instruct every patient (all, most, none)
- whether they give instruction during every appointment (every treatment, every periodic treatment, only during the first, never)
- what are their reasons for not giving instruction (lack of time, the patients knows how to clean correctly his/her teeth, repeating instruction does not improve their performance)
- how long they discuss oral hygiene in each session (up to 2 minutes, 2 to 5 minutes, 6 to 10 minutes, more)
- which instruments they recommend for cleaning teeth (toothbrush, dental floss, wooden toothpick, plastic or rubber toothpick, interproximal brush, oral rinse, water pick)
- whether they usually demonstrate tooth brushing technique/interproximal cleaning on a plastic model (every treatment, every periodic treatment, only during the first, never)
- whether they usually demonstrate in their patients' mouth (every treatment, every periodic treatment, only during the first, never)
- whether they ask patients to demonstrate how they perform tooth cleaning by themselves (every treatment, every periodic treatment, only during the first, never)
- whether they instruct differently patients at high risk for caries or periodontal disease
- in what type of dental clinic they work (private or public).

Statistical analysis

Differences in prevalence of different instruction methods provided by dental hygienists were determined using a univariant analysis (chi-squared test). Analyses were performed using SPSS software version 9.0, for Windows (SPSS).

Correlation between means of instruction and age or type of dental clinic was determined using the Pearson correlation test.

RESULTS

At the annual meeting of the Israeli Society of Dental Hygienists, 300 dental hygienists were asked to complete the questionnaire, and 179 returned the filled questionnaire during the meeting (60% response rate).

Demographic characteristics

The dental hygienists were all females aged 21 to 68 years (mean age 39.05 ± 18.18). The number of years

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Table 1 Distribution of dental hygienists' reports regarding the means [n (%)] used for oral hygiene instruction

	Yes, every meeting	Yes, every periodic appointment	Only in the first meeting	No	Total
Do you usually demonstrate the technique for correct tooth brushing on a plastic model?	48 (26.8)	60 (33.5)	22 (12.3)	49 (27.4)	179 (100)
Do you usually demonstrate the correct usage of toothpick/interproximal brush/dental floss on a plastic model?	37 (20.6)	54 (30.0)	11 (6.1)	76 (42.2)	178 (100)
Do you usually demonstrate the technique for correct tooth brushing in the patient's mouth?	48 (27)	63 (35.4)	25 (14)	42 (23.6)	178 (100)
Do you usually demonstrate the correct usage of toothpick/interproximal brush/dental floss in the patient's mouth?	55 (30.9)	85 (47.8)	15 (8.4)	22 (12.4)	178 (100)
Following instruction, do you ask your patients to demonstrate how they perform tooth brushing by themselves?	33 (18.5)	57 (32.0)	26 (14.6)	62 (34.8)	178 (100)
Following instruction, do you ask your patients to demonstrate how they perform flossing or use interproximal brush/toothpick by themselves?	30 (16.9)	57 (32.2)	25 (14.1)	65 (36.7)	177 (100)

practicing as a dental hygienist ranged from 1 to 36 (mean 11.81 ± 9.36): 54.7% had worked less than 12 years (juniors), and 45.3% more than 12 years (seniors).

Of all participants, 49.7% worked in private practice only, 21.7% in public practice only, and 28.57% in both private and public practices.

Oral hygiene guidance and education practice

Overall, 127 (70.9%) reported that they provide oral hygiene instruction to all their patients; 51 (28.5%) to most of their patients; and 1 (0.6%) reported that she never provides oral hygiene instruction to her patients. Regarding the frequency of oral hygiene instruction, 97 (54.5%) reported giving instruction at every meeting, 73 (41%) at every periodic treatment, and 8 (4.5%) reported that they gave oral hygiene instruction only in the first meeting for each patient. The reasons provided by the hygienists for not instructing their patients regarding oral hygiene measures included: lack of time (21.7%), no need since the patient knows how to brush (61.5%), the patient appears uninterested to receive the instruction (23.6%), and instruction does not improve the oral hygiene of the patients (0.6%).

Of the participants, 97.2% reported instructing their patients to use a toothbrush, 57% recommended flossing, 34.1% wooden tooth pick, 85.5% plastic or rubber tooth pick, 67.6% interproximal brush, 45.8% mouth rinsing, and 32.4% water pick.

They spent on average 4.32 ± 2.09 minutes instructing and educating their patients regarding correct oral hygiene performance in a session; 19 (10.7%) reported spending up to 2 minutes for the instruction, 121 (68%) 2 to 5 minutes, 35 (20%) 6 to 10 minutes and 3 (1.7%) more than 10 minutes.

Of the dental hygienists that reported working in both private and public clinics, most hygienists (72%) stated they spent the same amount of time for instruction in both clinics, 26% claimed that they spent more time in private practice, and 2% more time in public clinics.

About one fifth of the participants (22.2%) reported instructing differently patients at high risk for caries and/or periodontal disease, while 77.7% reported giving the same instructions.

The distribution of dental hygienists' reports regarding the means used for oral hygiene instructions are shown in Table 1.

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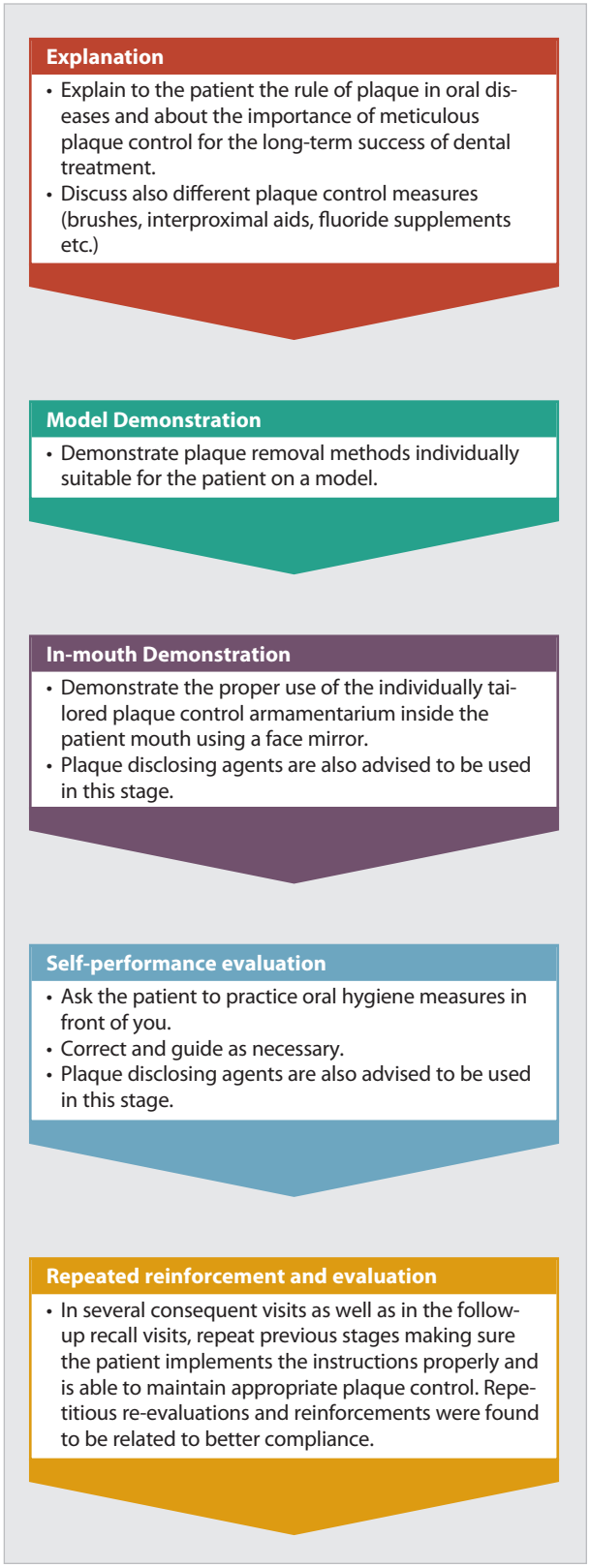


Fig 1 A suggested protocol for oral hygiene education.

No correlation was found between the reported duration for providing oral hygiene instruction and type of instruction. Similarly, no correlation was found between means of instruction and age, seniority, place of graduation, and type of dental clinic.

DISCUSSION

Treating a disease starts, and is based upon, prevention of the disease in the first place. There are several levels of prevention: primary prevention, ie avoidance of pathology development; secondary prevention, ie early diagnosis and treatment of the pathology before significant morbidity occurs; tertiary prevention, ie reduction of adverse effects and complications of pre-established disease and restoration of function; and quaternary prevention, ie avoidance of the consequences of overtreatment and overmedication for the specific condition.[10,11]

Caries and periodontitis, the main pathologies that we encounter, are diseases that should be treated with similar guidelines to other diseases. Those guidelines include prevention of all kinds of disease as the first line of defense. Each and every patient entering our clinic should be engaged in a comprehensive and well-organized prevention program. Our primary role is providing explanation to patients regarding the disease, its etiology, risk factors, and methods of intervention and prevention of all disease types.[11]

In our previous study it was reported that frequency and number of recall appointments might improve compliance with dental preventive measures.[7] This was attributed to the repeated oral hygiene instruction, reinforcement, and education. Failure to instruct and educate patients regarding preventive measures will lead to lack of compliance and higher prevalence of disease. Bellini et al[12] concluded that the optimal frequency of instruction by a dentist or hygienist in good oral hygiene is once every 1 to 3 months. Although Ower[13] did not find the number of instruction sessions to be associated with reduced plaque level, he still recommended frequent refreshing of instructions. Hetland et al[14] conducted an experiment based on the work of Sfiderholm and Egelberg,[15] in which three oral hygiene

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instruction visits were given one week apart. The visits were 45, 30, and 15 minutes long. The instruction group was compared to prophylaxis alone and prophylaxis plus instruction. Initial plaque levels were high: all instruction groups lowered plaque scores by approximately 70%, whereas the prophylaxis alone reduced scores only by approximately 21%. Decreased plaque scores were maintained over 24 weeks.

It is our duty as dental professionals to educate our patients again and again regarding preventive measures. This is the most important role of the dental hygienist as well as of the dentist. Indeed, this requires hours of teaching, explanation, demonstration, and reinforcement. It is our duty and the basis upon which our profession should be based. As in all fields of medicine, prevention is the most important key to success.

According to the present report, it seems that dental hygienists in the tested group do not make enough effort to educate and instruct their patients regarding oral hygiene preventive measures. On average, dental hygienists in the studied cohort spent approximately 4 minutes discussing oral hygiene. Dental hygienists were also not employing effective strategies in the selection of patients most in need of intensive instructional efforts, and did not use sufficient demonstration methods in order to improve their patients' performance.

Dental practitioners employing hygienists should encourage oral hygiene instruction programs in their clinics. Those programs should include repetitious demonstrations and reinforcement in order to improve overall outcome and prevention of future disease. A suggested protocol for oral hygiene education is presented in Fig 1. It should be noted that a patient who successfully learns and adheres to those guidelines will be a patient who will present better success rates for restorations, crowns, implants, periodontal procedures, etc. Patients with improved plaque control will be our long-term success patients.[11]

One limitation of this present study is its self-reported nature. This might be subject to bias and to inaccuracies of self-evaluation. Another limitation is the selection bias of those who attended the annual meeting and completed the questionnaire.

Nevertheless, within the limitation of this study it could be concluded that dental hygienists should pay more attention to instruction and education regarding oral hygiene preventive measures. The use of demonstration on models and in the patients' mouth, as well as viewing and correcting patients during their performance, might improve oral health among our patients. Further educational programs for dental hygienists in this regard are warranted.

Dental hygienists as well as dentistry curricula should be enhanced, with an emphasis on prevention as a primary goal of our profession.[11] This should be one of the major issues discussed and embedded into our students' way of thinking.

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