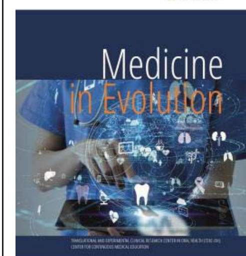
# Dentists' involvement in oral health promotion and prevention in their daily practice



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## Abstract

Oral diseases like caries and periodontal disease are highly preventable and the involvement of dental practitioners in preventive and educational measures in their daily practice play an important role. Aim: assessment of Romanian dental practitioners' interest and involvement in oral health promotion and dental prevention in their daily practice. Material and method: a cross-sectional pilot study was conducted in 2021 on a sample of 66 dentists, with a mean age of 37.59 ± 9.66 years, using an on-line self-assessment questionnaire. Results: 62.12% of dentists declared they include oral health promotion and prevention to a very large extent in their daily practice, 93.94% assessing and counselling their patients at the first appointment regarding risk factors. However, only oral hygiene is monitored during the dental treatment and less during the maintenance phase, while eating habits and smoking are seldom approached by the dentists. Professional dental cleaning based on regular notification of the patients is performed by 89.39% of dentists. Conclusion: Most of the dentists declare a high interest in integrating oral health promotion and prevention in daily practice, but focus mostly in the control of dental plaque.

**Keywords:** oral health promotion, dental prevention, dental preventive education, oral health education

## INTRODUCTION

Dental caries and periodontal disease are the most frequently met oral conditions at global level [1], despite the fact that they both are highly preventable [2]. The evolution of caries and periodontitis leads to poor quality of life [3] due to the pain, impaired mastication, esthetic dissatisfaction and increased cost of treatments [4,5,6]. Therefore, the preventive measures are not only desirable but also achievable through proper educational and preventive interventions [7,8].

Dental caries is a multifactorial disease and initiated when the balance between demineralisation and remineralisation is broken in favour of acid attack [9]. Therefore, all the factors that bring a contribution to the increase in acidic level in the oral cavity play a negative role on caries initiation, evolution of relapse after the curative treatment [7]. In early stages, dental caries are represented by white spots, area or demineralisation, that have the potential to be reversed by remineralisation [9].

When it comes to periodontitis, it is characterised by the chronic inflammation induces by the persistence of the subgingival biofilm and the breakage in the balance between bacterial load and host immune response [10]. In early stages it is represented by gingivitis which, as well, has the potential to heal after the biofilm is disrupted and the factors that favour plaque accumulation are removed [10].

Primary prevention is defined as a set of measures to avoid the initiation of the disease, while secondary prevention aims to arrest the early stages of dental carries and third prevention to avoid complications [1,2,11].

Part of the carious and periodontal risk factors are behavioural factors and have a strongest impact [7,8]. Regarding the dental caries, such risk factors are consumption frequently and in high quantities of sugars, improper or irregular oral hygiene, low exposure to fluoride [7], while for periodontal disease, besides the improper oral hygiene, as common factor with dental caries, smoking has a great impact [8].

According to World Health Organization recommendations [12], the control of these risk factors should be in the first place managed though oral health promotion programs so that the key messages reach mass population and especially vulnerable communities. However, dental practitioners play an important role in the prevention and there are updated protocols that aims to guide the dental professionals to get actively involved in primary and secondary prevention and to move away from only curative treatments, thus tertiary prevention [13]. Therefore, dentists are encouraged to established individualised recall intervals for maintenance, to offer dietary and smoking avoiding counselling and oral hygiene instruction to apply sealant and fluoride varnishes to prevent and disrupt the progression of incipient carious lesions [11,14-18]. Unfortunately, dentists are predominantly treatment oriented, focusing in their daily practice on restorative care, in order to offer curative treatments for the already present effects of the progression of the disease [19]. In addition, on long term, there is evidence that prevention is more cost-efficient than treatments, interventions for education and prevention reduces cost for dental treatments which is in favour of patients and healthcare systems [20] without dental offices decreasing their activity and revenues but just by shifting from treatment-oriented to preventive-oriented procedures as well as reaching larger communities [21].

### *Aim and objectives*

The aim of the present study was the assessment of Romanian dental practitioners' interest and involvement in oral health promotion and dental prevention in their daily practice.

## MATERIAL AND METHODS

A cross-sectional pilot study was conducted in June-July 2021 by a research group from the Faculty of Dental Medicine of the "Carol Davila" Medicine and Pharmacy University (Bucharest, Romania) on a sample of 66 Romanian dentists. Subjects invited to participate in the study were assessed used a self-administered online questionnaire and prior to invitation they were informed about the survey in respect to the Declaration of Helsinki and the current European privacy law, by including in the introduction section of the questionnaire, the scientific aim of the study, its anonymous character and assuring their right to interrupt the completion of the form at any moment in case of withdrawal. Participants who agreed to take part in the study expressed their consent by completing the survey. No personal data were collected through the form and, as an anonymous web-survey, no sensitive data were collected.

## RESULTS

The study population had a mean age of 37.59 ± 9.66 years and 74.24% (49 subjects) were females. All the participants in the study were practicing dentistry in private dental offices and were not involved in academic activity in oral healthcare area. They declared a mean post-graduate clinical experience of 11.28 ± 9.35 years, 62.12% (41 subjects) practising predominantly general dentistry while the others limiting their practice to Endodontics (7.58%), Periodontics (6.06%), Pedodontics (6.06%), Oral Implantology (6.06%), Prosthetics (4.55%), Oral Surgery (4.55%), or Orthodontics (3.03%). When it comes to their professional degree, 56.06% (37 subjects) were general dentists, 19.70% (13 subjects) were dental specialists while 24.24% (16 subjects) were dental residents.

Regarding the self-reported involvement in oral health promotion and prevention in their daily practice, 62.12% declare they include this aspect to a large extent (Table I). When it comes to updating their education regarding dental prevention, 83.33% stated that they do it as frequently as there is such an opportunity and it was observed that as reported sources of education there are not only formal scientific events (courses/congresses/webinars) but also informal discussions either on-line in certain groups of dental professionals on social-media or with medical representatives of oral healthcare products companies (Table I).

Table I. Self-reported integration and continuing education of oral health promotion and prevention among dentist

| Assessed parameter | Answers | % (N) |
|---|---|---|
| *Self-reported integration of oral health promotion and prevention in daily practice* | | |
| | To a very large extent | 61.12% (41) |
| | To a large extent | 12.12% (8) |
| | To a moderate extent | 13.64% (9) |
| | To a small extent | 9.09% (6) |
| | Not at all | 3.03% (2) |
| *Frequency of updates on education regarding oral health promotion and prevention* | | |
| | As frequently as there is an opportunity | 83.33% (55) |
| | Annually, as part of Continuing | 7.58% (5) |

| Assessed parameter | Answers | % (N) |
|---|---|---|
| | Dental Education events | |
| | Seldom | 9.09% (6) |
| *Sources of information for updates on education regarding oral health promotion and prevention* | | |
| | Courses/congresses | 66.67% (44) |
| | Webinar | 59.09% (39) |
| | Scientific journals | 51.52% (34) |
| | On-line professionals groups on social media | 46.97% (31) |
| | Medical representatives of oral healthcare products companies | 60.61% (40) |

Assessment of the risk factors for oral health and counselling behavioural change in this regard, was performed at initial appointment and examination in the dental office by 93.94% (62 subjects). However, during subsequent visits to the dental office in different phases of dental treatments and post-treatment, oral hygiene was observed to be the only risk factor taken into consideration to be followed by the dental practitioners more frequently during the therapeutic phase compared to maintenance/monitoring phase (Figure 1)

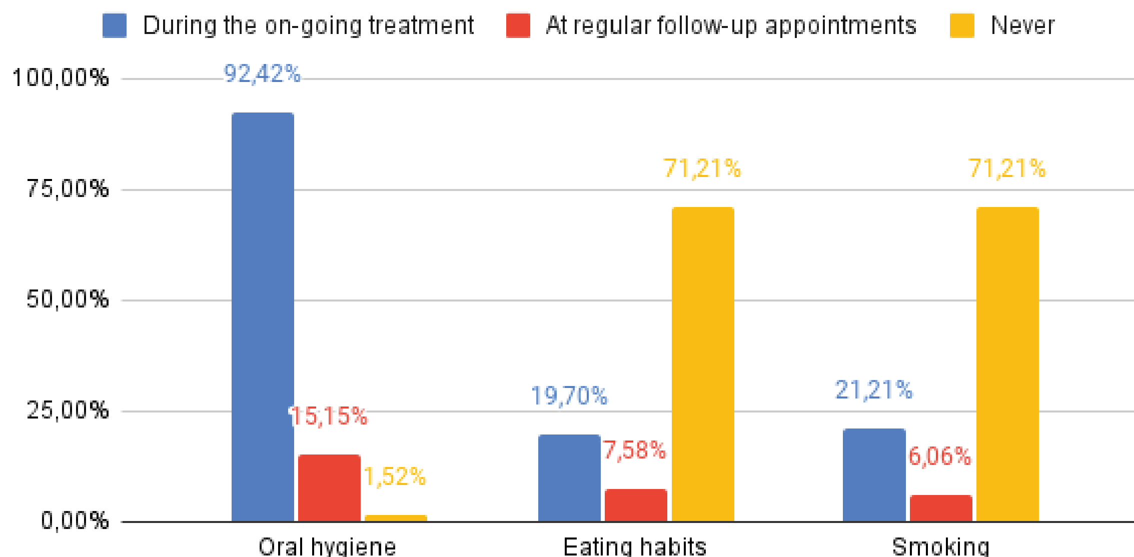


Figure 1. Assessment of risk factors and counselling by the dentists during different therapeutic phases

Results regarding the involvement of participants in oral hygiene counselling showed that toothbrushing technique with a manual toothbrush as well as flossing were the most frequently oral hygiene habits approached by the dentist during daily oral healthcare educative session offered to the patients. Interdental brushes were the product with the least involvement of dentist in the recommendation for the patients. When it comes to the education method used by the dentists in the dental office, verbal description was most frequently mentioned, irrespective of the oral hygiene product; practical methods were less used and demonstration on educative model was preferred (for all the products except for

dental floss) over guided/supervised practice directly by the patient in the oral cavity during the counselling session (Table II).

Table II. Educative methods used by dentists in counselling the patients regarding oral hygiene

| | *Oral hygiene counselling* | | | | |
|---|---|---|---|---|---|
| | **Manual toothbrushing** | **Powered toothbrushing** | **Dental floss** | **Interdental brushes** | **Oral irrigator** |
| *mentioning the product* | 13.64%(9) | 43.94%(29) | 62.12%(41) | 33.33%(22) | 18.18%(12) |
| *verbal description of the product and technique* | 77.27%(51) | 63.64%(42) | 63.64%(42) | 37.88%(25) | 54.55%(36) |
| *demonstration of the technique on a model* | 71.21%(47) | 33.33%(22) | 50.00%(33) | 22.73%(15) | 16.67%(11) |
| *guided and supervised practice of the technique in oral cavity in the dental office* | 37.88%(25) | 21.21%(14) | 56.06%(37) | 19.70%(13) | 7.58%(5) |
| *presentation of a video with the technique* | 30.30%(20) | 36.00%(24) | 19.70%(13) | 15.15%(10) | 34.85%(23) |
| *offering informative flyers/brochure about the product/technique* | 4.55%(3) | 3.03%(2) | 1.52%(1) | 1.52%(1) | 1.52%(1) |
| *not involved* | 0%(0) | 3.03%(2) | 3.03%(2) | 9.09%(6) | 1.52%(1) |

When dentist approach patients' smoking behaviour, only 50% of them inform the patients about the potential harmful risk for oral health as well as for the impact on the dental treatment. More dentists recommend reducing the number of cigarettes smoked daily over either temporary quitting smoking during the dental treatment or completely stopping smoking. When it comes to practical advice for the patients to apply the recommendations, a low percent of dentists redirect or encourage the patients to enroll in specific counselling and supporting programs to stop smoking, or to use alternative products (Table III).

Table III. Dentists' attitude toward patients who smoke

| *Smoking counseling* | |
|---|---|
| *recommend quitting smoking* | 46.97%(31) |
| *recommend reducing the daily number of cigarettes* | 57.58%(38) |
| *recommend specific programs for quitting smoking* | 7.58%(5) |
| *recommend alternative smoking products* | 7.58%(5) |
| *recommend temporary avoiding smoking during the dental treatment* | 48.48%(32) |
| *refusing to perform dental treatments until quitting smoking* | 13.64%(9) |
| *informing regarding the risk of smoking on oral health* | 50.00(33) |
| *not involved* | 4.55%(3) |

When it comes to delivering professional dental cleanings as part of preventive and maintenance phases of dental treatments, 89.39%(59 subjects) reported regular recalls for such a procedures based on patients' notification at certain intervals, the rest of dentists participants in the study leaving in patients responsibility to decided when they need a professional cleaning after the active phase of the dental treatment.

## DISCUSSIONS

In the present study, dentists reported in large proportion their interest in integrating oral health promotion and preventive procedures in their daily practice as well as in updating their knowledge regarding this aspect through different forms of continuing dental education. Therefore, in line with the conclusions derived from "Preventive in practice - making it happen" Conference in 2014 and which aimed to establish a consensus regarding how oral diseases could be prevented in practice [21], institutions involved in under and post-graduate education as well as continuing dental education are encourage to offer

opportunities for dentists to train also for prevention and oral health promotion in their daily practice. In our study, dentists were most involved, as part of preventive measures, in the control of dental plaque, not only through professional cleanings but also through patients oral self-care counselling. The control of the biofilm is of outmost importance for prevention of both dental caries and periodontal disease [7,11], thus, this approach, with priority, among the dentist, is appropriate. However, there was observed a lack of involvement of dentists in recommending interdental brushes or oral irrigator which in cases of periodontal patients have a greater impact compared to dental floss [22]. In addition, dentists showed a greater involvement in oral hygiene counselling through verbal description or demonstrations on models, and less in developing practical skills of patients, the least method showing, from previous research on experiential learning, greater improvements in oral hygiene-related behaviour and control of dental plaque [23]. Unfortunately other risk factors with eating habits are often neglected by the dentists in our study, despite the international recommendations for the dentists to get involved in counselling the patients, as a common approach for both oral and general health to control non-communicable diseases [7,18]. In the present paper, the report did not include the results of the assessment of dentists' involvement in application of fluoride products (as part of dental caries prevention) since it is the aim of a related survey in our research.

## CONCLUSIONS

In the current study dentists declared in large proportion their interest in involving in oral health promotion and prevention as well as updating their education regarding this aspect. However, in the studied sample dentists were inclined toward the control of biofilm, not only professionally in the office but also at home by the patients with their daily oral hygiene routine, and less concerned about other behavioural risk factors like smoking and eating habits.

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