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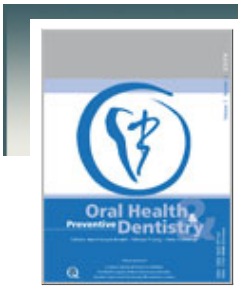

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The Role of Dental Hygienists in Oral Health Prevention

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Abstract

ABSTRACT:
Most dental diseases are preventable. This indicates that the main concept of dentistry could be changed to a situation in which the dental hygienist becomes the principal oral care professional. The competencies of dental hygienists focus on disease prevention and oral health promotion; thus referral to a dentist would only become necessary in the event of a failure in the preventive program where disease cannot be controlled. Future oral health care personnel need to be better educated to encourage people to implement healthy lifestyles rather than to treat teeth. In addition, the connection between oral health, general health and health-related quality of life will necessitate a multidisciplinary approach to prevention and oral health promotion. To focus strictly on oral health would too narrowly define the role of the dental hygienist in comprehensive prevention and health promotion. There is no precise boundary between the oral cavity and the rest of the body. Dietary advice to prevent dental caries and smoking cessation counseling to prevent periodontal disease and oral cancer also promote general health. Consequently the focus on prevention and health promotion makes the dental hygienist a very important person in the dental team of the future.

Key words:
dental hygienist, oral health prevention

INTRODUCTION

There are two aspects of the topic that will be discussed in this paper. One is the future need for prevention and oral health promotion. The other is the Dental Hygienist (DH) profession – what kind of knowledge and competencies should dental hygienists have?

FUTURE NEEDS FOR PREVENTION AND ORAL HEALTH PROMOTION

For lay people it is very difficult to detect dental diseases until they are quite severe, and although they may be controlled it is usually too late to prevent them. This is the reason why a system has been developed where people visit a dental surgery on a regular basis. However, most patients have no signs of disease or manifest only very early signs. The latter do not need complicated treatment and are reversible (Fejerskov and Nyvad, 2003; Hugoson et al, 1998). Consequently, it is not necessary to be assessed by a dentist every six months or every year. The regular recall visit could be taken care of by a DH. If there are no signs of disease and no risk for developing disease, there is no need for any further care at that visit, just a few encouraging words and a cleaning to make the patient feel comfortable and healthy with fresh breath. If there are early signs of disease, like initial carious lesions or gingival inflammation, there is a requirement for fluoride applications for the carious lesions, and scaling and polishing and oral hygiene instruction for the gingival inflammation (Axelsson and Lindhe, 1981; Cobb, 1996; Fejerskov and Nyvad, 2003).

This prevention regime could be provided by a DH. In addition, there is a need for a preventive program to prevent progression of further disease. The preventive program could include fissure sealants, dietary counseling, and instruction in oral hygiene, including the use of fluoride toothpaste (Axelsson and Lindhe, 1981; Sjögren, 2001). Effective plaque control is a key factor in the attainment of periodontal health. Diet counseling and encouragement to use fluoride toothpaste is important for caries control (Moynihan 2003; Sjögren, 2001). In addition, patients who smoke are in need of smoking cessation counseling to prevent periodontal disease and oral cancer (Bergström and Preber, 1986; Begström et al, 2000).

Referral to a dentist is necessary if there is evidence of more severe disease that requires restorative treatment or more complicated periodontal treatment. Sometimes there could also be a requirement to refer the patient to another health care provider like a physiotherapist, a nurse or a physician. Even if there are wide varieties of different sophisticated treatments for oral diseases, basic prevention is still the most important element – good oral hygiene including fluoride toothpaste, good dietary habits, and no smoking. The major challenge is convincing the patient to comply, which means that knowledge of behavioral science is as important as knowledge of dental or dental hygiene sciences. The DH has the relevant education regarding patient communication and motivation (Blitz and Hovius, 2003; Rich 2003). Many patients feel very confident about discussing their oral hygiene problems with a DH, who has time put aside for this and invites the patients to ask questions (Berndsen et al, 1993).

When looking at WHO goals for 2010 and 2025, it is obvious that patients could achieve all these goals in collaboration with the DH. WHO goals for dental caries are: 90% of 5-year-old children to be caries free; no more than 2 DMFT at 12 years-old; 75% of the population to be caries inactive at 20 years. The goals for periodontal disease are that 75% of 20-year-old adults should not develop destructive periodontal disease. WHO goals for 2025 are broadly similar to 2010, but with somewhat better figures. All the goals are achievable through health promotion and disease prevention. The DH is the only health care professional and member of the oral health team whose primary function continues to be the prevention of oral disease and promotion of well-being (IFDH, 1995). There is no rationale for a dentist to supervise or direct a DH or to examine patients before they visit a dental hygienist (Manga, 1997). With a more collaborative model, which has evolved over the years DHs should work as primary health care providers. In a study by Axelsson and co-workers patients who regularly visited a DH kept their teeth and gums healthy over the years (Axelsson et al, 1991).

Dental caries has declined and a new philosophy for treatment, minimally invasive dentistry, is in place (Ericson, 2004). Drilling will probably become increasingly rare and the new caries removal and cavity preparation methods and new adhesive materials used for filling may be tasks for DHs in the near future (Ericson, 2004). However, it is important to point out that the main task for a DH is prevention and that initial carious lesions will require attention and monitoring throughout the patient's lifetime. There is scientific evidence that DHs can diagnose carious lesions with the same accuracy as dentists and DHs have even documented more initial carious lesions than dentists (Öhrn et al, 1996).

Most gingivitis can be prevented by optimal oral hygiene, and it has been conclusively demonstrated that the large majority of periodontal problems can be treated using non-surgical, conservative approaches (Cobb, 1996). The majority of oral diseases may be prevented by having a healthy lifestyle. However, there is a lack of knowledge about how to change lifestyles and how to promote health and well-being, and most chairside methods are only of short-term benefit. Many people value health very highly but are less prepared to change their lifestyle to promote health; and very often people expect prevention to be free of charge (Kaplan et al, 1993). A healthy oral cavity not only functions well but is also aesthetically pleasing for patients. The trend towards an increase in public awareness for oral health preventive measures may lead to sustained health improvements and a greater satisfaction with health-related quality of life.

THE DENTAL HYGIENIST PROFESSION

From an international perspective, the DH profession is fairly young but it exists in all parts of the world, if not in all countries (Darby and Walsh, 2003a). The International Federation of Dental Hygienists (IFDH) consists of members in 23 countries worldwide. If we look back to FDI Basic Facts from 15 years ago there are many countries that claim to have established the dental hygienist profession (FDI Basic Facts 1990). However, as there is no global agreement exactly how to define a Dental Hygienist, we do not know if all those countries really have one that IFDH would consider as a DH profession. The 23 member countries in the IFDH reflect the diversity of a global profession that encompasses practice within the dental team in private and public environments, community health, education, research, care for special needs patients, and many other areas of health promotion. While this diversity offers a valuable richness of experience, it can also provide a lack of consistency when identifying the international perception of the dental hygiene profession.

IFDH adopted a definition of a dental hygienist in Ottawa 1989 as follows:

"Dental Hygienists are health professionals who have graduated from an accredited school of dental hygiene. Through clinical services, education, consultative planning and evaluation, they seek to prevent oral disease, provide treatment for existing disease and assist people in maintaining an optimum level of oral health. Their primary concerns as health professionals are the promotion of total health through the prevention of oral disease" (Blitz and Hovius, 2003). This is a global description of a DH and contains no details of tasks performed. That is an important difference because, depending on research findings and experiences, theory and clinical practice develop and change, meaning that a certain task may not be relevant after a while. Other tasks may not have existed during basic education but can be developed some years later. For this reason it is up to the DH to practice evidence-based dental hygiene.

At the lowest level dental hygiene is studied at a technical college, but in some countries it consists of university-level training with academic degrees. It is of crucial importance that the training will become university-level with academic degrees, because that will help bring about full recognition of the profession. The duration of DH training ranges from 2–4 years and the clinical element of the training varies from 25 to 50%. In some countries there are possibilities of further studies to receive a Baccalaureate, Masters or PhD degree, in Dental Hygiene, Oral Health or Caring Sciences, which is a

necessary development for evidence-based prevention and oral health promotion (Johnson, 2003; Luciak-Donsberger, 2003).

The population per DH, which indicates service accessibility, reveals a large variation between countries. The USA has 2,000 inhabitants per DH compared to Austria which has 800,000 inhabitants per DH. In many countries there are no DHs at all. There is also a large DH per Dentist difference between countries, which indicates technical efficiency. In Canada and USA there is one Dentists per DH compared to Italy where there are 17 Dentists per DH (Johnson, 2003). There is a need for a better balance between DHs and Dentists based on the importance of oral health promotion and disease prevention.

The technical skills and supportive cognitive development in dental hygiene are based on many different theories from many disciplines. The most well known conceptual model proposed for dental hygiene is the 'Human needs' conceptual model by Darby and Walsh (2003b). They have defined Dental Hygiene as: "the field of study for the profession" and "the study of oral health practices and the management of adaptive behaviors required to perform these practices in order to assist clients in fulfilling their human need for wellness." Dental hygiene involves assessment, diagnosis, planning of intervention and evaluation, through oral disease prevention, health promotion, treatment and collaboration. The paradigm includes: client, environment, health/oral health, and actions of DHs. This means that the definition of health, and specifically oral health, is an important issue for the profession (Walsh and Darby, 2003; MacDonald, 2003; Gift, 1996). The aim is mainly to prevent oral diseases and to assist people in maintaining an optimum level of oral health.

Notwithstanding the fact that DHs are mostly focused on early signs of dental caries and periodontal disease, the above-mentioned definition also includes the provision of treatment for existing diseases. However, there is no exact border line between prevention and treatment of early signs of disease because all biological processes progress continuously. Thus, at a certain point someone will diagnose its status as abnormal. The more complicated signs of disease and more complicated cases will require to be treated by a dentist, who has the relevant education in dental sciences.

Obviously a DH should assess the oral status from a dental hygiene perspective, which covers the list included in the guidelines for 2-, 3-, and 4-year DH education programs that were adopted by IFDH 2001 (Blitz and Hovius, 2003). The following should be viewed as a list of examples of a broad competence rather than specific tasks: review and evaluate medical, dental and social history; record vital signs; perform extra/intra oral examination including periodontal and dental examination; take, interpret and discuss radiographs with a dental practitioner; take and record indices; perform risk assessment (e.g. tobacco, systemic diseases, etc.) and management; and assess psychological and cultural attitudes towards health.

The implementation phase includes: infection control, periodontal debridement and scaling, pain management, application of chemotherapeutic agents and pit and fissure sealants, fluoride therapy, polishing, care of prosthetic devices, care and maintenance of restorations including dental implants, health education and preventive counseling at individual and community level, nutrition counseling, orthodontic functions, and services for special needs patients. Finally, a very important part is to evaluate previously provided prevention and treatment, otherwise it is impossible to know if the prevention and treatment have been effectively implemented. At the evaluation stage it may be obvious that surgery, restorations or other more complicated treatments are necessary, indicating that it is time to refer the patient to a dentist. However, after surgery or implants or any other treatment provided by a dentist, the patient may return to the DH for implementation of the maintenance phase.

The DH also has a role in prevention of other oral diseases like oral cancer, where smoking cessation counseling plays an important role. Smoking is a severe risk factor for many diseases including periodontal disease. Smoking cessation counseling appears to be more and more important. DHs are health care providers, who meet their patients regularly and are competent to discuss behavioral changes and therefore represent an excellent resource in this area. Quitting smoking will also help to prevent general diseases and thus DHs should focus not only on the oral cavity but also adopt a holistic view.

The connection between oral health, general health and health-related quality of life necessitates a multidisciplinary approach to oral health status. Smoking cessation is an example of that. In addition, there is considerable ongoing discussion about the connection between oral diseases and general diseases (Renvert, 2004; Scully and Cawson, 1998; Öhrn et al, 2001).

Future oral health care providers need to be better educated to encourage people to implement healthy lifestyles and not just to treat teeth. Most people in our generation will develop and die from lifestyle-related illnesses. These are associated with diet, alcohol, tobacco and exercise, all with the exception of exercise, integrated with oral health and oral diseases. But people in general will keep their teeth nice and healthy, be free from pain and stress, feel safe, and be capable of eating, and gain appreciation and respect. That is why oral health care will be of great importance in the future.

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