

Program for teaching ergonomics in dentistry.

1. Introduction.

A few years ago a WG of the European Society of Dental Ergonomics has worked out a proposal for a program for teaching dental ergonomics. This is meant as a support for dental schools to set up a program in relation with the circumstances in own school and country. The immediate cause was the observation of ESDE that dental schools in Europe in general pay too little attention to teaching ergonomics in dentistry. Also in Western Europe though exceptions exist. E.g. in Belgium, France, the Netherlands and Spain programs for teaching ergonomics in dentistry have been developed. But so far we have seen only a few teachers of ergonomics in dentistry involved in activities and congresses of ESDE.

We have to conclude however that ergonomic training of dental students has become increasingly important for prevention of musculo-skeletal complaints, applying effective methods of working, organization of a dental practice and adequate cooperation with other people in dental practice. I will come back to this later

The just mentioned WG of ESDE existed of members who had more or less experience in teaching ergonomics in dentistry as part of undergraduate or continuing education.

The proposal for the program has been developed on the basis of existing programs, especially the curricular guidelines used for teaching ergonomics in the dental schools in the USA. It has been sent for consideration to the dental schools in Europe. Also to the dental schools in Romania. ESDE tries in this way to stimulate and assist dental schools in developing an education program for ergonomics in dentistry that covers this part of dentistry.

2. Why is ergonomics in dentistry important as part of an education program for dental students?

I will now first discuss why ergonomics in dentistry is important as part of an education program for dental students.

1. First of all it appears from international literature that about 65 % of the dentists show more or less severe musculoskeletal complaints. Workload and stress are increasing and the disability rate grows in relation with this. It is not possible to get exact figures about this from insurance companies but the trend is clear. I know that in the Netherlands the percentage of disabled dentists increased by 38 % in a period of 5 years as a consequence of physical distortions; and in the same period by 78 % as a consequence of mental problems, which are often related to physical problems. It has been calculated that more than 40 % of dentists now run the risk of being forced to stop practicing dentistry prematurely, completely or partly. And this means a large loss of human capital which could for an important part have been prevented.
2. A second phenomenon is the fatal belief of dentists that pain and discomfort belong to their professional life inevitably. But a fact is, as just mentioned, that an important part of disability could be avoided if a better working posture and instrument handling were used.

But what happens if schools do not train a dental student in using an ergonomically proper working posture? Without this training the result will be that the student learns to suppress his "proprioception" which means the ability to feel the load of his muscles, joints etc. what he needs for correcting wrong postures. This will result then in an unhealthy, often disabling working posture, with an inadequate handling of instruments.

3. A third problem is that dental schools train students to treat patients but when starting practicing dentistry the dentist will have to manage a complex organization in which

often different people are working with whom he has to cooperate. Further he faces increasing demands from patients, society and the government, with all the regulations he has to meet.

4. A fourth aspect that has to be considered is the legal responsibility of dental schools to train students to work in a healthy ergonomic way, with equipment that is suited for this purpose. I do not know how this legal responsibility is set out in the different European countries and how this is regulated in Romania. But in the Netherlands students have the same legal position as employees and that implies that dental schools bear responsibility for training students in healthy conditions.

About 2 years ago the International Standard ISO 11226 Ergonomics-evaluation of static working postures came into effect with criteria for a healthy static working posture. These criteria, worked out with reference to knowledge of anatomy and physiology, can be used as starting point.

Concluding: it must be considered as a responsibility of dental schools to train dental students to work in a healthy, that means ergonomic way regarding posture, instrument handling and methods of working. And to apply ergonomic criteria for selecting dental equipment and organization of dental activities. With the aim to prevent occupational health problems.

3. Proposed program.

First we have to answer the question, "What is ergonomics in dentistry?" This comprises all aspects of organization, management and methods of working necessary to provide effective and efficient oral health care for patients; and in such a way that a dentist experiences work satisfaction and is able to avoid health risks as a result of practicing dentistry.

The hardware is the arrangement of the working place with a.o. equipment to be able to treat patients. And the software consists of the knowledge and skills a dentist needs to work ergonomically.

I will now go through the program mentioning the different parts of this. You will find this program in the document I distributed.

4. How to arrange the program.

Training in ergonomics in dentistry has to be spread throughout the entire dental curriculum and be integrated as well in the preclinical and clinical training to be effective.

In some countries the dental school will execute the whole program intramurally as is the case in our dental school in the Netherlands. In others it may be combined with extramural activities. It is also possible that a part of the training will be dealt with after graduation, may be by a professional dental organization or as part of a vocational training.

It will be necessary to build up a relevant body of knowledge with respect to ergonomics in dentistry in the dental school, and to attract or train teachers with an appropriate competence for the different aspects of ergonomics in dentistry. But it will also be necessary to train the preclinical and clinical teachers in supervising the use of ergonomic skills by students.

I would like to finish now expressing the wish that you will succeed in your country in obtaining teachers for as well handling and developing ergonomic knowledge and skills in your dental schools.

Oene Hokwerda
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