

### General Dentists' Perspective in Teaching Methods of Continuing Educational Programs in Mazandaran Province (2010-2011)

### دراسة آراء اطباء اللسان في مجال إجراء البرامج التعليمية المتواصلة في محافظة مازندران

Maryam Seyedmajidi<sup>1\*</sup>, Sina Haghani<sup>2</sup>, Mina Motallebnejad<sup>3</sup>, Yadollah Zahedpasha<sup>4</sup>, Ali Bijani<sup>4</sup>  
<sup>1</sup> Dental materials research center, Dental faculty, Babol University of medical sciences (Corresponding Author)  
<sup>2</sup> Department of oral & maxillofacial radiology, Dental faculty, Babol University of medical sciences  
<sup>3</sup> Department of oral & maxillofacial diseases, Dental faculty, Babol University of medical sciences  
<sup>4</sup> Non-communicable pediatrics diseases research center, Babol University of medical sciences

\*Department Of Oral & Maxillofacial Pathology, Dental Faculty, Babol University of Medical Sciences, Babol, Iran.

E-mail: ms\_majidi79@yahoo.com  
 Fax: +98112291093  
 Tel: +98112291408

**Background:** it seems necessary to assess dentists' needs in order to upgrade the quality of the educational programs. This study was conducted to determine general dentists' perspectives in the continuing educational programs in Mazandaran Province.

**Methods:** This descriptive cross-sectional study was carried out among 430 dentists in Mazandaran during 2011-2012. A questionnaire was distributed to collect the data; it consisted demographic information and some questions about the continuous educational programs. The data were analyzed by SPSS 17 and Chi-square test.

**Results:** Most of the participants were interested in endodontic, restorative dentistry and prosthodontics programs. They believed that attending practical courses or lectures that show educational films are more appropriate for teaching programs than just listening to the professors' lectures. Participating in workshops, watching educational movies, studying books and scientific magazines are considered as the appropriate methods to upgrade depth of scientific knowledge.

**Conclusion:** according to the results of the study, major contents of continuous training courses should be reviewed and devised based on the learners' needs. They should present practical issues, new diagnostic and therapeutic techniques in modern dentistry. Moreover, due to nature of the discipline, workshops or lectures with educational movie presentation are the most appropriate methods for educational programs.

**Key words:** Continuous teaching, Dentistry, Mazandaran Province

**التصميم و الهدف:** إن معرفة متطلبات اطباء اللسان امر ضروري لاجل ارتفاع المستوى الكيفي البرامج.

اجريت هذه الدراسة بهدف تعيين آراء اطباء اللسان في مجال اجراء البرامج التعليمية المتواصلة في محافظة مازندران .

**البيانات:** هذه الدراسة التوضيحية - المقطعية التي اجريت خلال سنوات ٩٠-١٣٨٩ في محافظة مازندران تم اجرائها على اراء ٤٣٠ طبيب لسان . تم تجسيع المعلومات عبر استمارات و تم تحليل المقطبات عبر SPSS واختبار Chi-square .

**النتائج:** إن الرغبة عند اطباء اللسان كانت أكثر تجاه اندودانتيكس و من ثم الترميم و من ثم البروتز و قد رأى المشتركون إن الفاء الدروس عبر افلام و برامج عملية افضل من المحاضرة.

إن الضور في دوره التعليميه و مشاهدت افلام تعليميه و قراءة كتب و مجلات علميه . إن كل هذه الأساليب تم اعتبارها أساليب مناسبة جدا في ارتفاع المستوى العلمي .

**الاستنتاج:** نظرا الى هذه الدراسة يستحسن اختيار مطالب تكون مناسبة مع حاجيات المتعلمين و يكون اسلوب التعليم متناسب مع الاليات المتطورة في هذا المجال و ايضا يستحسن ان يكون التعليم عبر صفوف تعليميه او عبر محاضرات و افلام .

**الكلمات الرئيسية:** التعليم المتواصلة، طب اللسان . محافظة مازندران .

### بررسی نظرات دندانپزشکان عمومی درباره نحوه اجرای برنامه های آموزشی مداوم در استان مازندران (۹۰-۱۳۸۹)

**زمینه و هدف:** شناسایی نیازهای دندانپزشکان عمومی به منظور ارتقای سطح کیفی برنامه ها ضروری به نظر می رسد. مطالعه حاضر به منظور تعیین نظرات دندانپزشکان عمومی استان مازندران در مورد نحوه اجرای برنامه های آموزش مداوم دندانپزشکی صورت پذیرفت.

**روش:** این مطالعه توصیفی - مقطعی طی سالهای ۹۰-۱۳۸۹ در سطح استان مازندران با استفاده از نظرات ۴۳۰ دندانپزشک عمومی انجام شد. جمع آوری اطلاعات از طریق پرسشنامه حاوی مشخصات فردی افراد و سؤالاتی در مورد نحوه اجرای برنامه آموزش مداوم دندانپزشکی بود. داده ها با استفاده از نرم افزار آماری SPSS 17 و آزمون Chi-square واکاوی شد .

**یافته ها:** بیشترین تمایل به شرکت در برنامه های آموزش مداوم به ترتیب نسبت به اندودانتیکس ، دندانپزشکی ترمیمی و پروتز ابراز شده بود. شرکت کنندگان، انجام یا مشاهده کار عملی و سخنرانی همراه با نمایش فیلم را برای تدریس مناسب تر از گوش دادن به سخنرانی دانستند. حضور در کارگاه آموزشی، تماشای فیلم آموزشی و مطالعه کتب و مجلات علمی توسط تعداد زیادی از دندانپزشکان روشی مناسب جهت ارتقای علمی آنها مطرح شده بود.

**نتیجه گیری:** با توجه به نتایج مطالعه حاضر به نظر می رسد که رؤس مطالب در برنامه های آموزش مداوم بایستی متناسب با نیاز فراگیران بازنگری و به صورت ارائه مباحث کاربردی ، تکنیکهای جدید تشخیصی، درمانی و دندانپزشکی مدرن باشد . همچنین آموزش به صورت عملی در کارگاه های آموزشی یا سخنرانی همراه با نمایش فیلم با توجه به ماهیت رشته، مناسبترین روش انجام آموزش مداوم می باشد.

**واژه های کلیدی:** آموزش مداوم، دندانپزشکی، استان مازندران.

### صوبه مازندران میں مسلسل تعلیم کے بارے میں جنرل ڈینٹل ڈاکٹروں کے نظریات کا جائزہ .

**ہیک گراؤنڈ:** صحت عامہ کے پروگراموں پر عمل درآمد کے لئے ڈینٹل ڈاکٹروں کی تعلیمی ضرورتوں کو پورا کرنے کی ضرورت ہے۔ اس تحقیق میں مسلسل تعلیم کے تعلق سے صوبہ مازندران کے جنرل ڈینٹل ڈاکٹروں کے نظریات کا جائزہ لیا گیا ہے۔

**روش:** یہ تحقیق دو ہزار دس اور دو ہزار گیارہ میں صوبہ مازندران انجام دی گئی تھی اور اس میں چار سو تیس ڈینٹل ڈاکٹروں کے نظریات کا جائزہ لیا گیا ہے۔ تحقیق میں شریک افراد کو سوالنامہ دیا گیا جو ڈینٹل سائنس کے بارے میں مسلسل تعلیم کے پروگرام کے تعلق سے تھے۔ ڈانا کا ایس پی ایس ایس سترہ سافت ویئر اور جی اسکوائر سے تجزیہ کیا گیا۔

**نتیجے:** انڈو ڈانتیکس، ڈینٹل سرجری نیز پروٹیز کے شعبے میں کام کرنے والے ڈاکٹروں نے مسلسل تعلیم کی حامی بھری اور دلچسپی کا اظہار کیا۔ تحقیق میں شرکت کرنے والوں نے لکچر کے ساتھ ویڈیو کو بھی تعلیم کا مناسب طریقہ قرار دیا، تعلیمی ورک شاپوں، تعلیمی ویڈیوز اور علمی کتابوں اور رسالوں کے مطالعے کو بھی ڈینٹل ڈاکٹروں کے لئے مفید قرار دیا گیا کیونکہ ان سے ان کی علمی صلاحیتوں میں اضافہ ہوسکتا ہے۔

**سفارشات:** ان نکات کے پیش نظر ہمارے تعلیمی نصابوں میں مختلف موضوعات پر نئے نئے مسائل اور جدید تحقیقات کا اضافہ ہونا ضروری ہے۔ علمی موضوعات، تشخیص اور علاج کی جدید تکنیکوں سے ڈینٹل ڈاکٹروں کا آگاہ ہونا نہایت ضروری ہے۔

**کلیدی الفاظ:** مسلسل تعلیم، ڈینٹل شعبہ، صوبہ مازندران .

## INTRODUCTION

Continuous training is considered as the elementary principle in the world and finding the most influential method to improve it is the paramount need. The dentists' clinical skills should be developed to improve services to the patients (1). Even if the academic education (general and specialized courses) be sufficient, it could not guarantee the adequate skills required for the dentists' professional life. Since we are living in the era of knowledge explosion, our knowledge should be up to date regularly (2-4). The continuous educational training of medical associations is recognized in the world since 1974 and is one of the major objectives of medical education development centers that upgrade the dentists' professional skills in medical, administrative, social and ethical fields (1). Dental education is an ongoing process and a professional and ethical responsibility that should be continued from the moment of learning till the end of the expert life. A dentist has a duty to attend continuous educational programs (5). Nowadays, no dentist can claim that he/she has gained enough knowledge during his/her education and can cope with all the new medical methods or the patients different needs, alone. Therefore, it is obligatory to attend the continuous educational programs in many European countries (6). The persons who are in charge of medical and health services must participate in continuous educational courses in Iran, as well (7).

In many countries the governments are in charge of continuous trainings however there are some differences in the level of executive. In the majority of European and American countries, the medical associations have the executive power mostly; while, in developing countries the universities have the executive power (1). In a study conducted among 10 countries indicated that dentists are interested in regular continuous training on the condition that these trainings include all the fields of dentistry (8).

Attending continuous trainings and gaining points annually is the major criterion for the specialized medical centers to reaffirm the medical certifications of the learners (9). The educational programs should be based on the learners' needs and appropriate methods should be used to teach the knowledge and skills; also appropriate assessing system should be designed to improve the quality of educational programs. If these factors are not considered, the educational programs will not reach their objectives (4, 7, and 8).

It is a necessity to conduct needs assessment in designing and holding educational programs because it increases the participants' cooperation, motivation and finally enhances the quality of the programs (2). Different researches have showed that learners are much more satisfied when the continuous trainings are designed according to their needs and ideas (10-13). The major dissatisfaction of the dentists was that the subjects of trainings are not related to their professional and clinical problems (13).

The results of Moattari (1998) study showed that general dentists who have attended the educational programs were satisfied with the professors' behavior very much but dissatisfied with the courses in Shiraz (14). Zahed Pasha

(1999) carried out a research in Babol about continuous educational programs and concluded that the number of participants will decrease if participation score be eliminated; however, most of the participants believed that the educational trainings were related to their professional needs and contained new information (3). Borji (2000) studied about the general dentists' opinions about the content of continuous trainings courses in Zahedan; the majority of participants claimed that applied content and local issues should be presented in the course and there is no harmony between the content and the time during courses. About half of the participants did not say any positive point about the educational programs (4).

The purpose of this research is to evaluate the educational programs carefully, find out the problems and provide solutions, and if possible, to provide up to date knowledge and skills and enhance continuous educational programs in dentistry.

## METHODS

This cross-sectional study was conducted during 2010-2011. The Dentists Association of Mazandaran province provided the list of dentists who had licensure for dentistry. The data were collected by a questionnaire that was designed by the researcher. It included two parts, there were demographic information including age, gender, dentistry work experiences in the first part; and questions about the priority of different specialized fields in dentistry to be presented in retraining, the level of satisfaction, participation motivation, notification process, and the priority of methods to run continuous training courses in the second part. The validity of the questionnaire was determined by experts.

The questionnaires were distributed to the participants, and gathered after a while. The dentists received sufficient and necessary explanations about the questionnaire. The questionnaires were checked and if any question remained unanswered, the participants were asked to answer if possible.

The gathered data were analyzed by SPSS 17 and descriptive statistics to calculate frequency, mean and standard deviation. The Chi-square test was used to compare the groups together. **Less than 0.05 was considered to be significant.**

## RESULTS

630 questionnaires were distributed and 430 dentists returned them. Although the questionnaires were administered in person, 200 dentists were not interested in participating. (68/25 % returned the questionnaires). The frequency of participants based on their place of living are mentioned in table 1.

There were 313 (72/8 %) males and 117 (27/2 %) females. The mean age of the dentists was  $41/55 \pm 8/5$ ; the age range was 35 to 83 years. The mean of work experience was  $38/0 \pm 09/13$ . The last time that the participants have attended continuous training was different, between 1 to 132 months. 54% of the dentists have participated in the educational programs during the last year.

The participants worked in various different field in dentistry including 394 (91/6%) in restorative dentistry, 342 (79/5 %) in endodontic, 278 (64/7 %) in prostheses, 128 (29/8 %) in pediatric dentistry, 106 (24/7 %) in periodontics,

94 (21/9 %) in surgery, 78 (18/1 %) in orthodontics, 38 (8/8 %) oral and maxillofacial radiology, 30 (7%) in oral medicine and 8 (1/9 %) oral pathology.

The results show that male dentists were interested in orthodontics ( $P<0/001$ ), prostheses ( $P=0/008$ ), surgery ( $P=0/007$ ) fields and female dentists were interested in pediatric dentistry ( $P<0/001$ ).

The dentists were most interested to attend the continuous training with the following subjects: endodontics, restorative dentistry and prostheses, respectively. The other fields such as periodontics, surgery, pediatric dentistry and oral medicine were in the second priority. Oral and maxillofacial radiology and pathology gained the least attention among the attendees.

The dentists were most satisfied with restorative dentistry courses and endodontic was in the second level. Moreover, pathology and oral medicine were in the lowest level of satisfaction.

Frequency level of satisfaction is presented in table 2.

327of participants declared that they have attended continuous training courses in order to learn new materials, 244 of them said their motivation was to review the previous materials and 244 dentists have enrolled to ask their questions and solve their problems. Moreover, 105 persons wanted to be motivated to study and 196 dentists were looking for academic environment. 175 persons mentioned that they wanted to visit their old friends. 364 dentists stated that they attended the classes to gain higher scores. The other result was about the ways that the dentists were informed about the courses. 35 dentists (7/7 %) were informed through contacts with universities, 46 (10/7%) through notifications, 26 of them (6%) were informed through mail. Moreover, 193 (44/9) of dentists heard about the courses from their colleagues, 263 (61/2 %) of them

Cities	Number (percent)
Amol	65(15/1)
Babolsar	21(4/9)
Behshahr	17(4)
Tonekabon	13(3)
Joybar	7(1/6)
Chaloos	22(5/1)
Ramsar	10(2/3)
Savad koh	11(2/6)
Mahmoodabad	9(2/1)
Neka	11(2/6)
Noor	14(3/3)
Nooshahr	13(3)
Ghaem Shahr	44(10/2)
Sari	67(15/6)
Babol	106(24/7)
Total Score	100(430)

Type of presentation				Number of participants	Dentistry
Presentations with Q & A	Lecture along with educational movies	Watching practical works	Doing practical works in workshops		
89	171	191	252		Orthodontics
108	171	196	240		Endodontic
112	256	83	71		Oral medicine
95	241	77	66		Oral pathology
89	150	200	233		Prosthesis
82	163	177	190		Periodontics
79	166	189	188		Maxillofacial dentistry
96	174	195	133		Retrospective dentistry
99	197	140	126		pediatric dentistry
107	230	106	87		Oral and Maxillofacial Radiology

informed through messages, 75 (17/4 %) checked the website of the university and 30 (6/9 %) heard the news from medical council, dentistry association and journals.

The participants were asked about their level of satisfaction from continuous training notification. The results were as follow: 28 (6/5 %) were thoroughly satisfied, 66 (15/3 %) were fairly satisfied, 135 (31/4%) of them said they had average satisfaction and 90 people (20/9 %) declared they were not satisfied and 107 (24/9 %) were totally dissatisfied with notifications about the time of the courses.

307 of the participants (71/4 %) preferred to be informed through SMS service about the course time. 36 dentists (8/4 %) believed that mail is the best way, 15 (3/5 %) of them preferred notifications and 47 (10/9 %) believed that the university web site is the best tool to be informed about the courses.

170 of the dentists thought that reading books and scientific magazines are supposed to be the best tools to upgrade the dentists' scientific level. 175 persons (40/7%) preferred to watch educational films, 153 of them (35/6 %) attended seminars and congress, 116 dentists (27%) read Continuing Medical Education journals and 123 of the participants (28/6 %) use internet (on-line training) to enhance their scientific level. Also 142 persons about (33 %) preferred continuous training courses, 196 (45/6 %) attended workshops and 114 persons (26/5 %) preferred short training courses.

## DISCUSSION

Since knowledge, concepts and techniques are presented constantly, continuous training is necessary to upgrade the quality of dental services, it would also expand dentists' skills and knowledge (15, 16). Therefore, determining learners' needs and sorting out the priorities is essential to reach the objectives of courses (2, 3, and 10). In this study, dentists were keenly interested in endodontics, restorative dentistry and prostheses continuous training courses respectively and were in the least interested in oral and maxillofacial radiology and oral pathology. A study conducted in Britain revealed that restorative dentistry is the major priority of dentists' needs (17). In another study, needs assessment showed that restorative dentistry, esthetic dentistry and fixed prosthesis were important for the dentists (18).

Dentists' level of satisfaction with the past programs was fairly high with restorative dentistry and endodontics was placed in the second level. Pathology and oral medicine gained the least level of satisfaction. Different reasons were mentioned about the dissatisfaction of programs such as vast amount of materials, the repetition of references and lack of practical points, the insufficient knowledge of professors, high costs of the tuition, lack of educational equipment, and ignorance about learners' needs are the major problems in different field of dentistry.

Generally, lack of scientific panels, numerous participants, theoretical presentation of materials, lack of educational equipment, defects in audio-visual facilities, ignorance about dentists' needs and lack of new dentistry presentation are the major factors of dissatisfaction. Therefore, it is necessary to pay special attention to learners' needs and educational

programs should have positive effect on the participants' clinical performance, also lead to using advanced and modern techniques (19)

However, Zahedpasha showed that most of the participants were satisfied with continuous training courses. The attendees suggested to improve the quality of the programs according to the needs and new techniques (3).

Borji et al (2000) studied the dentists' ideas in Zahedan about the content presented in continuous training courses. He concluded that most of the attendees asked for practical materials. Moreover, many of them preferred localized issues and the selection of materials based on poll. They mentioned that the time and the amount of content presented during courses are not in good harmony. About half of the participants did not consider any positive point about the programs. They noted that the results of poll should be in the center of attention and the attendees should be informed about the subjects and materials in advance (4), that is similar to our study results.

In a research carried out by Motahhari (1998) it was remarked that dentists were satisfied with the professors of the classes but not with the courses. They suggested that such programs should be evaluated much more carefully and their advantages and disadvantages should be contributed to the debate (14).

The efficient method to present materials in continuous training courses is adapting or observing practical exercises in orthodontics, endodontic, prosthodontics, periodontics, oral and maxillofacial surgery and dentistry workshops. However the method of lecturing along with educational movies is considered to be a better option for pediatric dentistry, oral medicine, and pathology and radiology workshops. Sadeghi et al (2007) conducted a study in Kerman and Rafsanjan about continuous training of restorative dentistry. He noted that the subjects of these course should be reviewed according to learners' needs regularly. The teaching method should be practical or observation (20). On the whole, in our study the attendees preferred practical workshop and lectures along with educational movies than just listening to the presentation. However, in a study conducted in Southeast Asia, most of the participants preferred direct method of teaching to distance learning and online courses (21).

The first period of dental retaining was conducted in Iran for 5 years (1991-1996); the major problem was that the programs were presented in traditional method also needs assessment were not done and the principles of dental education were not considered. Experiences demonstrate that when learners are just inactive listeners the educational method has its least impact. It does not matter how well the lecture is presented or how the lecturer influences the listeners, the fact is that this type of education does not have a good impact. Teacher-based learning is a big problem in continuous training courses. In this method, although attendees' Knowledge might improve, their behavior does not change and the medical care does not enhance (2, 16, and 22). Similarly, our study notes that teacher-based and presentations are not suitable teaching methods.

The majority of the participants said their primary motivation for attending the continuous training was to learn new material and in the second level to upgrade their scores. As Zahedpasha mentioned if the retaining' score be eliminated, the number of participants will decrease. Class attendance made 1/3 of the participants to attend the courses (3).

Most of the dentists were informed about the courses through SMS or colleagues. It is highly recommended to pay special attention to send notifications to dentists to inform them about continuous training courses. 71/4 % of the participants preferred to be informed through SMS about the courses which is a possible, suitable and cheap way.

Only 33% of the participants claimed that attending continuous training courses has extended their knowledge, this problem indicates that the programs are not designed well. Attending workshops, watching educational movies and reading references and academic magazines are considered to be suitable teaching methods.

Using educational movies in teaching is an efficient method, it is possible to watch them repeatedly at home and not participate in the courses. On-line training for dentistry is one of the influential methods in continuous training, but it has become in the sixth priority since Iranian dentists do not have easy access to internet.

It is highly recommended that further practical studies be conducted in different fields of dentistry in the country so that the continuous training programs be designed based

on the researches. The programs should provide not only new knowledge, thesis and contents but also make the dentists trust the new techniques (15). The programs should be designed according to needs assessment so that their quality be promoted (21).

According to the mean age ( $14/55 \pm 8/5$ ) and dentists' work experiences ( $13/09 \pm 0/38$ ), these people will continue their profession for two decades, therefore, devoting special attention to this study and making use of the results in the future programs will lead to continuous training improvement.

The participants suggested to provide practical issues, new diagnostic and therapeutic techniques and modern dentistry in continuous training programs and prevent to present theoretical materials. Moreover, the lecturers should be talented and expert. Doing practical activities in workshops and lectures along with educational movies are considered to be the best teaching methods.

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