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Organization of Practical Training under the Conditions of Credit-Modular System for the Fourth Year Students of Faculty of Dentistry

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Abstract. The article deals with the organizational problems of practical training of the IV year students of Faculty of Dentistry in terms of credit-modular system training. This form of training is important in dental specialists training. The experience of medical practical training at the Department of Therapeutic Dentistry of Ivano-Frankivsk National Medical University was described. According to modern requirements the state standards of higher dental education in Ukraine were developed. They were focused not on the content, timing and organizational parameters of the educational process but on the competence first of all, that is the willingness and ability of graduates of dental faculties of higher medical educational establishments to carry out professional activities after obtaining a diploma. The medical practical training of IV year students of the Faculty of Dentistry is based on such methodological principles and professional-active approach to training process goal. The system of medical practical training organization, which was until quite recently, should be adapted according to credit-modular system conditions, namely to combine independent theoretical training with practical skills under the supervision of a teacher and doctor-supervisor. The question of medical practical training possibility during an academic year on a cumulative basis is still undecided, because the increase in the staff number and clinical site of the field-oriented department is necessary in such case. Distance learning, especially during foreign students' training should be developed and implemented to optimize the methodological support of medical practical training.

Keywords: *students' medical practical training; credit-modular system of education.*

Introduction

The inclusion of higher medical education of Ukraine into Single European Area declared by the Bologna Agreement has occurred, however, the need for adaptation of the principles identified in it to existing realities in Ukraine and long-term developments remains relevant. Implementation of credit-modular system in medical education should be guided by the principles of differentiated approach to the reorganization and restructuring of the existing system of educational process [1].

Combination of theoretical knowledge and high performance of professional procedures is the principle laid in the educational qualification characteristics, which is the state standard of higher dental education. This defines the difficulty in organization and conduction of practical training in dental students.

In addition, credit-modular organization of educational process emphasizes the need for students' independent work at the same time [2, 3]. Thus, the student can master dental procedures at the appropriate level only working with the patient, so the study on phantoms does not allow achieving the desired result. The medical practical training promotes consolidation of the practical skills acquired during the training, the development of the ability to make independent decisions in the diagnosis and treatment. It allows learning the order of medical records registration, learning how to behave in the workplace and make collegial decisions, mastering the rules of deontology and medical ethics.

Practical training is a very important stage of cognitive activity as part of materialized action, that is the criterion of truth of knowledge, as well preparation of students during their practical training aimed at creating motivational, cognitive and operational components of further professional development [4, 5].

Summarizing all above-mentioned information, it should be noted that organization of high-quality medical practical training at the Faculty of Dentistry that allows you to consolidate practical skills in a real professional

environment, is very important. However, their implementation requires adjustment according to the requirements to the Bologna system.

Main part

Improvement of the level of students' skills envisages permanent integrated training in three stages [6]. Mastering of the practical skills in Therapeutic Dentistry and testing are expected in the first stage. The interdepartmental scientific-practical center is used to ensure complete independent practical skills training at the Department of Therapeutic Dentistry. This center is equipped with phantoms where students of the IV course prepare for further work in the clinic. In addition, students are able to receive the latest research and practical information using library stock, new periodicals. That is important at the first stage.

Estimation of skills and abilities initial level, their consolidation and development is conducted at the second stage of practical training for the IV course students of Faculty of Dentistry. The final control of the skills mastering degree, which plays a crucial role in the integration of knowledge and skills, independent in-depth evaluation and treatment of patients is performed at the third stage.

The practical training in therapeutic dentistry for fourth-year students is envisaged in VIII semester (summer) and is regulated by the "Guidelines of practical training in higher educational institutions of Ukraine" (Order of the Ministry of Education of Ukraine №93 of 08.04.1993). The requirements for practical training of students in the programs of practical training and in all standard educational programs, including cross-cutting programs were defined. Practical training is carried out according to the requirements of the new rules of educational and qualification characteristics, under the new plan for 2015-2016 academic year.

Mastering of 20 practical skills in practical training in Therapeutic Dentistry by fourth-year students of Faculty of Dentistry due to educational program have been stipulated: prevention of emergency conditions, clinical methods of examination (oral questioning – specification of patient complaints, case history and past medical history; examination – external, vestibule of the oral cavity, oral cavity, dental arches, gingiva, dentogingival junction, detection of periodontal pockets and measuring of their depth, investigation of teeth mobility, affecting of furcation and gingival recession, etc.); evaluation of periodontal indexes and oral cavity hygiene level; assessment of laboratory methods of patients' examination results (morphologic, cytological, bacterioscopic); functional estimation of periodontal tissues and teeth (stomatocopy, capillaroscopy, test of Kulazhenko, reoperiodontography); treatment of periodontologic patients (diathermocoagulation of interdental papillae, dental splinting, scaling, application of gingival and periodontal dressing, rinsing, oral bathes, applications, installations, irrigations, opened and closed curettage of periodontal pockets). The next level of the field mastering is training of manual skills due to defined list. These practical skills are required to be mastered as they are mostly clinical manipulations. Performance of the practical skills is only possible in case of provided individual workplace, thematic patients, equipment, instruments and materials.

The initial level of IV year students of Faculty of Dentistry allows to see patients independently, however, with the help of medical specialist. General management and interaction with other bodies of health care is provided by the teacher who is an employee of the department and conducts consulting and explanatory work among medical students and supervisors, monitoring and summarizing.

Students should master the semantic module "Medical practice of therapeutic dentistry" during practical training. In order to achieve the main goal of a module students of IV course have to learn the following:

1. The main principles of periodontologic cabinet (department) work. Rules for records and reports completion. The rules of ethics and deontology when working with dental patients.
2. The prevention of emergency conditions in Therapeutic Dentistry.
3. Conducting of the main clinical methods of examination of periodontal patients with periodontal tissue diseases.
4. The special clinical methods of periodontal tissues diseases diagnostics. Indicial evaluation of periodontal tissues condition.
5. Parodontogram. X-ray examination of the patients with periodontal pathology. Laboratory methods of examination of the patients with periodontal pathology (clinical, biochemical, cytological, microbiological, immunological, morphological).
6. Functional evaluation of periodontal tissues and teeth condition.
7. The inflammatory diseases of periodontal tissues – pappilitis, gingivitis, localized periodontitis.
8. Dystrophic-inflammatory and dystrophic diseases of periodontal tissues (generalized periodontitis and periodontosis).

9. The use of the main principles of periodontal tissues diseases treatment. Compilation of the periodontal patients' treatment plan.
10. Methods of oral cavity professional hygiene. Different methods of dental deposits removal. Prescription of the medicines for patients with periodontal pathology. Preparation and use of periodontal dressing.
11. The technique of closed and opened curettage.
12. The technique of mobile teeth splinting in a case of periodontal tissues disease.
13. The practical purpose of therapy for patients with periodontal tissues diseases considering indications and contraindications. Definition of the pharmacodynamics and pharmacokinetics of recommended drugs and their mechanism of activity. Practical application of physical therapy techniques in the treatment of patients with periodontal pathology.
14. Practical use of oral hygiene means.
15. Dispensary care of patients with diseases of the periodontal tissues.

The staff of the department prepared a number of teaching materials for methodological support of practical training: methodical recommendations for teachers; methodical recommendations for students; methodical developments for mastering topics submitted to independent work. "The Diary of Practice Training" is a part of centralized methodological support of practical training which is daily filled by student and signed by a teacher after independent work is finished.

Three main areas of study are defined for methodological objectivation of the practical training by the staff of Therapeutic Dentistry department: clinical thinking formation; the practical skills mastering and culture of socializing with a patient. Basic time of practice is provided for work in a clinic for implementation of these tasks. Thus, for development of future doctors' clinical thinking clinical discussion and case history filling are used in a diary. A student together with a doctor-supervisor performs initial examination, makes provisional diagnosis, discusses the possible variants of treatment and chooses the most adequate.

Great attention is paid to formation of human qualities which correspond to the doctor's profession, such as: ability to control oneself, to control emotions, adequate behavior in the stressful situations which are the important constituents of professional studies during practical training. According to the experience, the most successful form of educational work with students is interview on questions of medical etiquette and deontology illustrated by clinical examples.

Current control is conducted in accordance with the specific aims of the module during medical practical training. Diary of practical training is one of types of students' activity and their control by supervisor of practical training. It is a basic document during the period of practical training, including its defense. Students must write down into a diary everything that has been done every day (Appendix 1). Community service is also represented in it (issue of sanitary bulletins, conversations organized in the collectives, etc). A student must give a diary to the practical training supervisor from the department for verification at least two times a week and to a direct supervisor (a dentist from medical establishment) for signature every day.

At the end of practical training a student fills a final report about the work done (Appendix 2). Having finished practical training, having recorded digital and text reports, the student receives characteristic (Appendix 3) and review of a diary (Appendix 4) signed by direct supervisor of practical training and head doctor. The following indexes are represented during characteristic and review writing: the level of theoretical preparation, mastering of practical skills, mastering of medicines prescriptions, compliance with deontology and ethics, attitude of a student to practical skills mastering. Characteristic is notarized with the seal of medical establishment, where practical training was conducted. A diary and final report notarized by a signature of the practical training supervisor are obligatory for student's admitting to the final module control.

Final module control of practical training occurs on the last day of practical training. Control of the module 1 is conducted by the teachers of department of Therapeutic Dentistry in presence of a supervisor from the base of practice and if report documents are provided. Module mark is determined as a sum of marks of current educational activity (in grades) and assessment of final module control (in grades), which are proposed at the assessment of test control, theoretical knowledge and practical skills, in accordance with a list defined by the program from Therapeutic Stomatology. Each student may get 200 grades as maximum for mastering of the module (test credit), including current educational activity – 120 grades (60%), the results of final module control – 80 grades (40%).

The assessment of quality of practical skills independent mastering in the process of practical training is conducted according to the list defined in the final report of the module, namely:

- 5 grades – gets a student who presented the offered amount of manipulations in written form and thoroughly described them at high theoretical level;
- 4 grades – gets a student who presented the offered amount of manipulations in written form and described them theoretically, but made unimportant mistakes;
- 3 grades – gets a student who presented the offered amount of manipulations in written form and described them theoretically, but made substantial mistakes;
- 2 grades – gets a student who presented the offered amount of manipulations in written form and described them theoretically, but made, serious substantial mistakes.

With the aim of accessing to final module control a student has to make the necessary amount of practical skills by 100%, present them in written form and give the grounded answers for a question related to contents of the diary, performed the necessary scope of personal, social and health education (issue of sanitary bulletins, conversations) and as a result get 72 grades as minimum (that is 60%) out of 120 maximal grades.

A maximal amount of grades, which a student can get during module control, is 80, herewith:

- test control constitutes 30 grades (minimal passing point –75%);
- practical skills – 30 grades;
- situational tasks – 20 grades.

Final module control is considered passed, if a student gets at least 50 grades.

At the department of Therapeutic Stomatology of IFNMU the criteria of final module control assessment were developed. In particular, a test control provides 30 test tasks implementation and every correct answer is estimated in 1 grade (a maximal amount of grades for tests is 30). It is possible to get 30 grades for practical skills (10 grades for each practical skill maximally). The evaluation of practical skills provides:

- 0 grades – practical skill is not performed; a student does not master the technique of skill;
- 2 grades – practical skill is not performed, a student gives inexact answers in relation to the technique of skill performance;
- 4 grades – practical skill is performed partly, a student makes considerable mistakes during skill performance;
- 6 grades – practical skill is performed, but a student makes mistakes during skill performance;
- 8 grades – practical skill is performed, a student makes insignificant mistakes during skill performance;
- 10 grades – practical skill is performed, a student perfectly masters the skill technique.

The maximal amount of grades for the solving of situational tasks makes 20 (2 situational tasks – 10 grades for each). Situational task solving is estimated as following:

- 0 grades – there is no answer or the answer is incorrect;
- 2 grades – incomplete, inexact answer;
- 4 grades – an answer is not full, a student makes of major mistakes;
- 6 grades – an answer is with some changes, corrections;
- 8 grades – a partial answer is given to the situational problem, an inexact answer is given to additional questions, there were remarks and corrections;
- 10 grades – correct answer, comprehensive answer for additional questions, fluency of material mastering.

Theoretically final module control must be conducted near a dental chair with a patient, but it is possible to use of phantoms and visual aids taking into account certain tension with clinical bases.

The question of practical training during an academic year on a cumulative basis still opened. A cumulative basis is an alternative to a cyclic method in accordance to principles of credit-modular system of study. Present organization of practical training allows the students to take part in stomatological helping patients during all cycle of treatment from the first visit and inspection to establishment of diagnosis, sanitation. This is an advantage of present of practical training organization. However, a process of treatment of stomatological diseases is discontinuous, therefore, during practical training conducted during an academic year it is possible to master practical skills at once after a theoretical material, so knowledge is consolidated. In addition, such “continuous form” helps forming of highly skilled dentist who performs all scope of therapeutic measures of treatment on one patient consistently. So, present variant of practical training has its own advantages and disadvantages.

It is known that the students of European and American medical schools master practical skills in university clinics independently. It is difficult to organize it in our conditions, because a considerable increase in the number of department employees is necessary as well as the presence of up-to-date equipped bases. This predetermines the necessity of clinical base of Therapeutic Stomatology department expansion for providing not only educational process due to schedule but also daily training of practical skills by students-practitioners.

There is a tendency of practical training in an own country among students-foreigners, that is fully justified taking into account the possibility of acquired knowledges and abilities adaptation and facilitation of becoming specialist in the future. We consider the development and implementation of distance learning for the students-foreigners to be perspective. Thus, it will be expedient to apply both synchronous, pedagogical (on principle of direct active intercourse) and asynchronous, information (creation, transmission and maintenance of educational materials, organization and accompaniment of educational process of the distance learning by telecommunication connection) technologies [7, 8].

Undoubtedly, future doctor's training of practical skills requires a traditional visual contact, but all theoretical preparation and exercises in making decision may be conducted in the distance form. Thus, there is no a necessity for changes of curriculum in order to divide correctly the time of studies on distance and traditional "phases". It is only necessary to correctly form an informative block – in the format of module working plan for independent work and also to explain a necessity to the use of this resource by grades which a student gets for individual work on a website. At this case providing of students by high-quality methodical recommendations and educational-informative video data has a large value for mastering of clinical discipline "Therapeutic stomatology".

Conclusions

The state standards of higher stomatological education of a "specialist" level developed taking into account modern requirements are orientated on jurisdiction, that is on making of willingness and ability of graduating students of stomatological faculties of higher medical educational establishments of country to perform professional activity after qualification. Practical training of IV year students-stomatologists at the department of Therapeutic Dentistry is conducted exactly on such methodological principles and professional-cognitive approach to special-purpose orientation of educational process. The combination of independent theoretical preparation of students with training of practical skills under control of a teacher and doctor-counsel is necessary for adaptation of the present system of organization of practical training in a context of credit-modular system. The issue of practical training during an academic year on a cumulative basis is still opened and requires the expansion of clinical base of profession-oriented departments. Development and introduction of the distance forms of studies, especially during international internship of students-foreigners is topical for optimization of the medical practice methodological providing.

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Appendix 1

№	Date	Name, surname, age	I II	Complaints and case history	Objective examination, dental formula
1	2	3	4	5	6

1.	11.09.1 5	Andriy Bilokur 1994	I	Short-term pain of mandible posterior teeth at left, after food intake.	The deep decay cavity of 36 tooth (Class I) filled with food debris. A dentine is soft, walls and bottom are painful at probing, thermal diagnostic is positive, the pain immediately disappears after irritation stop. Percussion is negative. Pulp testing – 8 mA.
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The diagnosis	Treatment (what has been made, stages of treatment, prescriptions of medicines)	Worked points	Signature of supervisor
1	2	3	4
Acute deep decay of 36 tooth	Anesthesia, preparation of carious cavity, antiseptics, pulp cap (.....), isolating cap (.....), filling (.....).		

Appendix 2

FINAL REPORT

about practical skills mastering during practical training at Therapeutic Dentistry

The list of practical skills	Planning	Made	Mark in grades
The number of days	15		accessed
Patients are accepted (all the visits)	40-45		accessed
all the primary patients	15		
Diagnostic use of stains:	30-45		
Evaluation of hygieneic condition of an oral cavity due to Hygienic index of Fedorov-Volodkina	10-15		2-5
Evaluation of hygieneic condition of an oral cavity due to Hygienic index of Green-Vermillion (OHI-S)	10-15		2-5
Determination of gingival inflammation due to test of Shiller-Pisarev	10-15		2-5
Definition of Silness-Loe index	5-10		2-5
Definition of PMA index	5-10		2-5
Definition of PI index	5-10		2-5
Definition of CPITN index	5-10		2-5
Formalin test	10-20		2-5
Benzidine test	8-20		2-5
Morphologic examination	5-10		2-5
Cytological examination of periodontal pockets contents	5-10		2-5
Bacterioscopic examination of periodontal pockets contents	5-10		2-5
Treatment of patients with periodontal diseases	5-15		2-5
- papillitis, gingivitis	2-3		2-5
- periodontitis	2-3		2-5
- periodontosis	2-3		2-5
Diathermo-coagulation of hypertrophied interdental papillae	1-2		2-5
Teeth splinting with Glas Span system	4-5		2-5
Removing of dental debris and calculus	5-10		2-5
Application of medical periodontal dressing	10-15		2-5
Application of isolating periodontal dressing	10-15		2-5
Conducting of irrigation, installation, application, rinsing and bathes	20-25		2-5
Conducting of closed curettage	1-2		2-5
Physical methods of diagnostic and treatment in periodontology	8-13		
The number of sanitate patients	5-7		

Worked points	120-150		
personal, social and health education:			
- conversations	5-8		accessed
- issue of sanitary bulletins	1		accessed
Total points			72-120

Signature of doctor-supervisor from medical establishment _____

Head doctor _____

Appendix 3

Characteristic

of the student _____ group _____ course
(name, surname)

Signature of doctor-supervisor from medical establishment _____

Head doctor _____

Appendix 4

REVIEW OF DIARY

Direct supervisor of practical training _____
(signature)

Supervisor of practical training from department _____
(signature)

Points for practical training _____

«_____» _____ 20____.
(date of practical training defense)

COMMENT. At writing of characteristic and review such indexes are represented: a level of theoretical preparation, practical skills mastering, medicines prescriptions mastering, bases of deontology and ethics, attitude of student to practical skills mastering, knowledge of medical documentations and statements.