HEALTH, ENVIRONMENT, DEVELOPMENT

INTEGRATING CLINICAL SKILLS AND INTERPERSONAL COMPETENCIES IN DENTAL EDUCATION: OUTCOMES OF PRACTICAL TRAINING

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Summary

Clinical practice plays a particularly important role in the modern training of future dentists, as it is a key stage in developing the professional competencies of dental students. This stage allows students not only to consolidate the theoretical knowledge acquired during their studies but also to apply it in real-world clinical settings, thereby fostering practical skills and clinical judgment. Practical training develops students' ability to assess a patient's condition, develop a treatment plan, and effectively perform dental procedures under the supervision of experienced instructors.

In addition to professional skills, clinical prsctice significantly contribute to the development of communication skills: students learn to establish rapport with patients of all ages, explain complex medical terms in accessible language, and work collaboratively with colleagues and assistants. This allows future doctors not only to perform technical procedures but also to ensure patient comfort, an integral part of high-quality dental care.

An important aspect of clinical practice is the integration of theory and practice: students have the opportunity to apply knowledge of anatomy, physiology, pathology, and dental disciplines to specific clinical situations. This fosters analytical thinking and the ability to make informed clinical decisions. Thus, internships are a fundamental stage in students' professional development, preparing them for independent and responsible work in modern dental institutions.

Key words: therapeutic dentistry, practical skills, clinical practice.

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1. Introduction

The training of future dentists is a multifaceted process, encompassing not only the acquisition of theoretical knowledge but also the development of practical manual skills, the development of communication skills when interacting with patients, and clinical reasoning. During practical training, students are taught standardized algorithms for performing professional procedures, while the instructor monitors the quality of their performance and corrects any identified errors (Bazalytska,2023).

The primary development and assessment of practical skills is traditionally carried out through practical training, including the use of phantom models. Despite the proven

effectiveness of phantom training, this approach does not fully reproduce the variety of clinical situations encountered by dentists in real-life practice. Several scientific studies indicate that students lack even basic (propaedeutic) practical skills, while mastering more complex clinical procedures, particularly those involving periodontal tissues, presents significant challenges (Koshkin,2023).

This necessitates the search for and implementation of additional or improved teaching methods aimed at improving the level of practical training of students in dental faculties. Given the limited capacity of phantom training to reproduce the full range of clinical situations, on-the-job training is particularly important in the training of dentists. It is a key stage in the professional development of future specialists, serving as a link between theoretical training, practicing manual skills on phantoms, and actual clinical practice. On-the-job training not only ensures the acquisition and reinforcement of practical skills and abilities but also the development of professional competencies necessary for independent, individual work and the making of responsible clinical decisions in dental practice *(Samoylenko et al., 2014, Manekar, et al., 2018)*.

Direct work with patients during their practice helps students develop their ability to analyze medical and socially significant problems, develop clinical judgment, and justify diagnostic and treatment decisions. Furthermore, this stage of training plays a crucial role in developing communication skills, argumentation, professional dialogue, and interaction with patients and medical staff, which are integral components of a dentist's professional work *(Moore, 2022)*.

Various types of work-related activities during the practice help students develop a culture of professional thinking and develop the ability to logically and consistently present their work both orally and in writing. Participation in clinical and organizational activities fosters a readiness for a systematic approach to analyzing medical information, critically interpreting it, and perceiving and implementing innovative diagnostic and treatment methods *(Owlia et al., 2022, Shevchenko et al., 2023)*.

Students' independent work during practices plays a significant role in developing cognitive activity and creative thinking, as well as skills for independently searching, analyzing, and interpreting professional information. Furthermore, this component of the educational process fosters the ability and readiness for professional self-improvement, self-realization, and adaptation to the conditions of modern clinical practice, which are essential for developing competitive dentists *(Horb-Havrylchenko, 2022)*.

With the rapid development of dentistry, the constant renewal of filling materials, the modernization of diagnostic and treatment equipment, and the introduction of modern medications, the practical application of acquired theoretical knowledge is increasingly important. This can be accomplished through practical training at clinical sites equipped with the latest technology and equipment to meet the current demands of the modern dental market *(Mitchenok et al., 2023)*.

2. Practice-based learning in the preparation of future dentists

Students in the Faculty of Dentistry complete practical training in therapeutic dentistry as dental assistants, which allows them to become familiar with the organization of treatment and diagnostic processes in a dental office setting. During their practical training, students participate in providing dental care to patients, learn the principles of medical record keeping, adherence to sanitary and epidemiological regulations, and practice practical skills under the supervision of a mentor dentist. Under the guidance of practicing dentists, students performed initial and follow-up examinations of patients using basic and additional clinical examination

methods, including history taking, visual examination, probing, percussion, and evaluation of additional diagnostic data. Based on the information obtained, students analyzed the clinical situation, formulated a preliminary and final clinical diagnosis, and developed an individualized treatment plan. During their practice, students participated in medical record keeping, including completing reports and recording treatment and diagnostic procedures, which allowed them to objectively assess the scope and nature of their acquired practical skills.

3. Development of professional competencies in the diagnosis of non-carious and carious dental lesions and their complications

During their clinical practice, dental students systematically consolidated and refined their practical skills related to the diagnosis and management of both uncomplicated and complicated forms of dental caries, as well as non-carious lesions of hard dental tissues. This stage of practical training is critically important for the development of clinical reasoning, precision in manual skills, and the ability to apply contemporary treatment methods effectively in real-world clinical settings.

The practical training program included mastering a wide range of carious cavity treatment techniques, including the use of field isolation (rubber dam), minimally invasive tooth preparation, and the application of both manual and mechanical instruments for controlled and precise removal of affected tissues. Particular attention was devoted to the restoration of the anatomical form of the tooth using modern restorative materials, including composite and glass ionomer restoratives, to ensure both functional integrity and aesthetic conformity with the natural tooth structure.

A central component of training involved the acquisition of skills in the stepwise management of complicated caries, including endodontic interventions for pulp involvement, as well as strategies for preventing post-treatment complications. Students also gained practical experience in diagnosing and managing non-carious dental lesions, such as dentin hypersensitivity, wedge-shaped defects, erosions, and pathological tooth wear, through the application of remineralization techniques, adhesive technologies, and restorative materials, thereby restoring both anatomical form and functional capacity of the teeth.

Special emphasis was placed on strict adherence to aseptic and antiseptic protocols, occlusal control, accurate formation of contact points and interproximal spaces, and aesthetic finishing of restorations. This comprehensive approach promotes the development of professional competencies, enhances clinical preparedness, and equips students with the skills necessary for independent practice in therapeutic dentistry.

4. Organizational and methodological aspects of the treatment of periodontal diseases within the framework of industrial practice

During the practice program for fourth-year dental students, special attention is paid to the treatment of periodontal diseases. In particular, the comprehensive treatment of conditions such as periodontitis requires a strictly adhered sequence of preventive and therapeutic measures. Effective and comprehensive care can be provided in two main ways. The first approach involves involving the maximum number of specialists in the treatment process, including a hygienist, a general dentist, an oral surgeon, and an orthodontist. While dividing the functions among several specialists allows for a high level of expertise at each stage of treatment, it also

leads to a blurring of individual physician responsibility for the final outcome of the treatment, making it difficult to assess the individual effectiveness of the interventions.

The second approach involves performing the main stages of comprehensive treatment by a single physician directly involved in the treatment of the disease—a periodontist. This principle allows for the integrity of the treatment process and responsibility for the final result to be maintained, and promotes a deeper understanding in students of the sequence of interventions, the logic of clinical decision-making, and the importance of a systematic approach to the management of patients with periodontal pathology.

During their practice, students are given the opportunity to observe both approaches, participate in individual stages of treatment, and analyze the effectiveness and validity of the methods used. This is an important element in developing the clinical thinking and professional competencies of future dentists.

During their practice, students had the opportunity to become thoroughly familiar with the workflow and equipment of a periodontal clinic, including the use of modern diagnostic and treatment equipment, instruments, and materials. Furthermore, the practice allowed them to master and reinforce key practical skills necessary for comprehensive periodontal treatment, including professional oral hygiene, periodontal tissue diagnostics, mechanical and medicinal therapy, and individualized treatment planning.

While treating patients, students mastered modern calculus removal techniques using hand scalers, universal curettes, Gracey curettes, and ultrasonic devices. Working with these instruments helped develop coordination, precision, and an understanding of clinical sequences, which are essential for developing professional competence in periodontics.

5. Development of clinical communication, emotional intelligence, and teamwork skills in dental education

The students' practical activities were particularly important for developing their communication skills, which are an integral part of a dentist's professional competence. Direct interaction with patients, conducting oral interviews, collecting medical histories, explaining treatment stages, and providing oral care recommendations contributed to the development of their ability to conduct professional dialogue, explain their actions clearly and concisely, identify and address each patient's individual needs and characteristics, maintain trusting relationships, and foster positive psychological rapport.

Furthermore, the practice contributed to the development of emotional intelligence skills: students learned to recognize a patient's emotional state, adjust their own behavior, and adapt their communication style based on the patient's reaction and perception of information. Working with patients of varying ages and social statuses allowed students to develop communication flexibility, persuasion skills, and motivation to follow recommendations for disease prevention and treatment.

Particular attention was also paid to team communication. Interaction with mentors, dentists of various specialties, and junior staff contributed to the development of their ability to coordinate their actions, listen to colleagues, articulate their opinions, constructively discuss solutions to clinical problems, and make collective decisions. All these aspects contributed to the students' developing a systematic approach to professional communication, developing medical ethics skills, and increasing their readiness for effective independent work in a modern dental clinic.

6. Conclusion

The practice program for students of the Faculty of Dentistry promotes the comprehensive development of clinical and communication skills necessary for the professional work of a dentist. Students master modern methods of diagnosing and treating carious and non-carious lesions of dental hard tissues, comprehensive periodontal therapy, and skills in using modern instruments and equipment. Practical training develops systemic clinical thinking, precision, professional responsibility, and a willingness to work independently. It also develops the ability to effectively interact with patients and the medical team, including reasoned explanations of actions, consideration of individual characteristics, and maintaining trusting relationships. Thus, practical training prepares students to safely and efficiently provide dental care in a modern clinical setting.

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