

PUBLIC HEALTH

LEGAL REGULATION OF HEALTH SPECIALIZATIONS AND SUBSPECIALIZATIONS IN THE FIELD OF DENTISTRY IN THE REPUBLIC OF NORTH MACEDONIA

Vlatko Kokolanski¹, Kjiro Ivanovski¹, Julijana Nikolovska¹, Mira Jankulovska¹¹ Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

Abstract

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Key words: specializations, subspecializations, dentistry, legal regulation

***Correspondence:** Vlatko Kokolanski, Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia.

E-mail: vkokolanski@stomfak.ukim.edu.mk

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Recognizing the dynamic nature of changes in legal regulations governing health specializations and subspecializations in dentistry, the purpose of this paper was to present the current legal framework governing health specializations and subspecializations in dentistry in the Republic of North Macedonia. Materials and Methods: We conducted a comprehensive search of legal regulations accessible at the database of regulations and publications on the website of the Official Gazette of the Republic of North Macedonia, utilizing specific keywords, including „specializations,“ „subspecializations,“ and „dentistry.“ Additionally, we analyzed regulations available on the websites of higher education institutions offering specializations and subspecializations in dentistry. From the pool of regulations scrutinized, we selected those marked as valid or partially valid and relevant. Our study employed the legal-dogmatic method, content analysis, and the descriptive method. Results: The legal framework includes laws, regulations, decisions of the Government of the Republic of North Macedonia, decisions of higher education institutions, and government programs. Health workers in dentistry, regardless of their employment status, have the right to engage in specialization or subspecialization. The Ministry of Health can approve specialization or subspecialization for foreign citizens with completed dental faculty education. However, approval procedures vary depending on the employment status. Health workers with higher education in dentistry can specialize in 8 branches of specialization and 2 branches of subspecialization, conducted in accredited institutions. During the specialization and subspecialization, health workers are guided by a mentor and educators. In conclusion, frequent revisions in the legal framework governing health specializations and subspecializations in dentistry in the Republic of North Macedonia imply a recurrent re-norming process, potentially affecting healthcare workers' understanding of the legal framework surrounding specializations and subspecializations. Given the rapid scientific evolution, we advocate for reduced norming and alignment of higher education programs with emerging scientific insights.

ЈАВНО ЗДРАВЈЕ

ПРАВНА РЕГУЛАЦИЈА НА ЗДРАВСТВЕНИТЕ СПЕЦИЈАЛИЗАЦИИ И СУСПЕЦИЈАЛИЗАЦИИ ОД ОБЛАСТА НА СТОМАТОЛОГИЈАТА ВО РЕПУБЛИКА СЕВЕРНА МАКЕДОНИЈА

Влатко Коколански¹, Ќиро Ивановски¹, Јулијана Николовска¹, Мира Јанкуловска¹¹ Стоматолошки факултет, Универзитет „Св. Кирил и Методиј“ во Скопје, Република Северна Македонија

Извадок

Цитирање: Коколански В, Ивановски Ќ, Николовска Ј, Јанкуловска М. Правна регулација на здравствените специјализации и супспецијализации од областа на стоматологијата во Република Северна Македонија. Арх Ј Здравје 2024;16 (1) 56-75.

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***Кореспонденција:** Влатко Коколански, Универзитет „Св. Кирил и Методиј“ во Скопје, Стоматолошки факултет, Северна Македонија.

E-mail: vkokolanski@stomfak.ukim.edu.mk

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Препознавајќи ја динамичната природа на промените во законските прописи кои ги регулираат здравствените специјализации и супспецијализации во стоматологијата, целта на овој труд беше да ја претстави актуелната правна рамка што ги регулира здравствените специјализации и супспецијализации по стоматологија во Република Северна Македонија. Материјали и методи: Спроведоме сеопфатно пребарување на правните прописи достапни преку базата на прописи и изданија на веб-страницата на ЈП „Службен весник на Република Северна Македонија“, користејќи специфични клучни зборови, вклучувајќи: „специјализации“, „супспецијализации“ и „стоматологија“. Дополнително, ги анализиравме прописите достапни на веб-страниците на високообразовните институции кои спроведуваат специјализации и супспецијализации во стоматологијата. Од сите прописи што беа разгледани, ги избравме оние кои беа означени како важечки или делумно важечки и релевантни. Нашето истражување го користеше правно-догматскиот метод, анализа на содржината и дескриптивниот метод. Резултати: Правната рамка вклучува закони, прописи, одлуки на Владата на Република Северна Македонија, одлуки на високообразовни институции и владини програми. Здравствените работници во стоматологијата, без разлика на работниот статус, имаат право да започнат со специјализација или супспецијализација. Министерството за здравство може да одобри специјализација или супспецијализација за странски државјани со завршен стоматолошки факултет. Сепак, процедурите за одобрување се разликуваат во зависност од работниот статус. Здравствените работници со високо образование од стоматологија можат да специјализираат во 8 гранки на специјализација и 2 гранки на супспецијализација, спроведени во акредитирани институции. За време на специјализацијата и супспецијализацијата, здравствените работници се раководени од ментор и едукатори. Како заклучок, честите ревизии во правната рамка што ги регулира здравствените специјализации и супспецијализации во стоматологијата во Република Северна Македонија подразбираат повторлив процес на ренормирање, што потенцијално може да влијае на разбирањето на здравствените работници на правната рамка за специјализациите и супспецијализациите. Со оглед на брзата научна еволуција, ние се залагаме за намалено нормирање и усогласување на програмите за високо образование со новите научни сознанија.

Introduction

Specialization in dentistry is crucial for any country, serving its primary functions - providing a solid dental educational foundation, meeting the needs of specific patients, responding to the complex societal needs on behalf of the dental profession, and addressing the growth needs of individual dentists¹.

The General Assembly of the FDI World Dental Federation in 2012 provided a definition of Dental Specialization. According to the FDI, Dental Specialization entails formal acquisition, ongoing maintenance, and continual improvement of comprehensive knowledge and experience-based competencies by a dentist in a specific discipline (specialty) of dentistry².

In Yugoslavia, prior to 1941, individuals could attain the title of dentist - specialist in diseases of the mouth and teeth upon completion of general medicine studies, followed by a mandatory two-year internship, additional two-year training, and a specialized theoretical and practical exam conducted by a commission formed within individual regional administration. However, legal provisions did not regulate further specialization in specific dental disciplines, leading to the emergence of unrecognized specialists in fields such as orthodontics³.

Following the country's liberation, Yugoslavia faced a significant shortage of professional personnel, particularly in oral healthcare. As a result, accelerated training programs for dental personnel were initiated. However, the training process was largely unplanned, resulting in the

establishment of various educational centers ranging from secondary dental schools to higher education institutions. Consequently, the post-war period saw a diverse range of differently trained dental professionals, with limited opportunities for specialization. While sporadic specializations occurred, primarily following the pre-1941 model, wherein general medical doctors could undergo three-year specialization programs, the absence of dedicated dental faculties or departments limited formalized specialization avenues. Nonetheless, individuals within university settings focused on specific dental professions, expanding their theoretical knowledge, conducting professional and scientific research, and contributing to staff education, effectively becoming *ipso facto* unrecognized experts in certain dental specialties³.

The legal framework governing specializations in dentistry within the former Yugoslavia originated from 1959 with the adoption of two key regulations. The first was the Rulebook on specialization branches and the duration of specialist experience for health officials⁴, followed by the Rulebook on specialization for health officials of the first group the subsequent year⁵.

These rulebooks delineated two potential areas of specialization in dentistry: jaw orthopedics with prosthetics and maxillofacial surgery. However, both specializations encountered implementation challenges. It was observed that dentists with specialized training but limited general medical knowledge were not considered suitable candidates

for maxillofacial surgery specialization. Similarly, the intended implementation of specialization in jaw orthopedics with prosthetics faced obstacles. Consequently, the outcome was the emergence of several specialists in maxillofacial surgery who had completed comprehensive medical education. Additionally, others specialized in jaw and teeth orthopedics (orthodontics)³.

In Yugoslavia, where the dental profession had attained a high level due to the presence of educational state centers, there was a considerable discourse within professional, social, and political circles regarding the necessity for revising specialization in dentistry. Stakeholders sought proposals for new legal frameworks that would modernize and legislate this issue in a manner more aligned with the contemporary stage of dentistry, the requirements of specialist personnel, societal needs, and available opportunities. In response to this need for reform, Lapter and Njemirovskij advocated for the introduction of three specialized fields: orthodontics, oral surgery, and general dentistry. They proposed maxillofacial surgery, as a cross-disciplinary domain encompassing both dentistry and medicine, to be reserved for graduate doctors³.

Following an extensive period of deliberation, the Regulation on the specialization of doctors, dentists, and graduated pharmacists was enacted⁶, based on the Law on Health from 1970⁷. This regulation specified the permissible areas of specialization for dentists, including diseases of the mouth and teeth, oral surgery, orthopedics of the jaws with

children's and preventive dentistry, and dental prosthetics. The duration of specialist internships across all branches was set at three years. Furthermore, the regulation outlined pathways for further specialization, stipulating that doctors specializing in surgery could pursue additional training in the narrower field of maxillofacial surgery, while dentists specializing in oral surgery could also pursue training in maxillofacial surgery. A minimum period of seniority, one year for doctors and two years for dentists, was established for each of these narrower specialties. The regulation also included provisions for specialization plans across all branches.

In 1984, pursuant to the Law on Health Care, adopted in 1983⁸, the State Committee for Health and Social Policy, building upon previous recommendations from the State Community for Health Care and the input from the Faculty of Medicine, Dentistry, and Pharmacy, promulgated the Rulebook on Specialization and Subspecialization of Health Workers and Health Associates with Higher Education⁹. This Rulebook delineated nine branches of dentistry in which health workers graduating from the Faculty of Dentistry could specialize: 1) Oral and periodontal diseases, 2) Dental and endodontic diseases, 3) Pediatric and preventive dentistry, 4) Maxillofacial surgery, 5) General dentistry, 6) Oral surgery, 7) Jaw orthopedics, 8) Dental prosthetics, 9) Social medicine with organization and economics of health care. Each specialization had a duration of 36 months, except for maxillofacial surgery, which required 60 months. Notably, the Rulebook did not provide for subspecializations

within dentistry; however, it did afford otorhinolaryngology specialists the opportunity to subspecialize in maxillofacial surgery for a duration of 24 months.

In 1991, the Law on Health Care was enacted, granting health workers the authority to specialize and subspecialize in specific branches of dentistry. The details regarding the branches of specializations and subspecializations, their durations, and the components of their internships were to be determined by the Ministry of Health, following consultation with the relevant higher education organization responsible for prescribing plans and programs. These determinations were to be conducted in accordance with regulations governing postgraduate studies¹⁰.

During the period of the law's implementation, three regulations were introduced to govern specializations and subspecializations: 1) the Regulation on specialization and subspecialization of health workers and health associates with higher education, initially adopted in 1992 and subsequently amended and supplemented several times¹¹; 2) the Rulebook on specializations and sub-specializations of health workers and healthcare workers with higher education, enacted in 2006⁽¹²⁾; 3) the Rulebook on specializations and subspecializations of healthcare workers and healthcare workers with higher education, established in 2011¹⁵.

The 1992 Regulation specified that health workers who had completed dental school could specialize in various branches of dentistry, including: 1) oral and periodontal diseases, 2) dental and endodontic dis-

eases, 3) pediatric and preventive dentistry, 4) maxillofacial surgery, 5) oral surgery, 6) orthopedics of the jaws, 7) dental prosthetics, and 8) social medicine with the organization of health activity. The duration of these specializations was set at 36 months, except for maxillofacial surgery, which required 48 months of training. Health workers with a completed medical degree, following specialization experience and successful completion of a specialist exam in otorhinolaryngology and general surgery, were eligible to pursue subspecialization in maxillofacial surgery in duration of 24 months¹¹.

The Rulebook on specializations and subspecializations of health-care workers and healthcare associates with higher education, enacted in 2006, outlined the following branches of dentistry available for specialization, along with their respective durations: 1) Pediatric and preventive dentistry – 36 months, 2) Maxillofacial surgery – 48 months, 3) Oral surgery – 36 months, 4) Orthodontics – 36 months, 5) Dental prosthetics – 36 months, 6) Reconstructive dental dentistry – 24 months, 7) Endodontics – 24 months, 8) Periodontology – 24 months, 9) Oral medicine and pathology – 24 months, 10) Primary dental health care – 24 months. Additionally, the Rulebook allowed healthcare workers with a completed medical degree, after fulfilling specialization experience and successfully passing a specialist exam in otorhinolaryngology and general surgery, to pursue subspecialization in maxillofacial surgery in duration of 24 months. Furthermore, the Rulebook provided avenues for subspecial-

izations within certain branches of dentistry: specialists in pediatric and preventive dentistry or dental prosthetics could subspecialize in pediatric prosthetics, specialists in oral surgery, dental prosthetics, or periodontology could subspecialize in oral implantology, specialists in dental prosthetics could subspecialize in reconstructive maxillofacial prosthetics. The duration of these subspecializations varied: pediatric prosthetics and oral implantology lasted for 12 months, and reconstructive maxillofacial prosthetics lasted for 6 months¹².

The regulations of 2011 introduced nine specializations in dentistry, each with its respective duration: 1) Pediatric and preventive dentistry - 36 months, 2) Maxillofacial surgery - 48 months, 3) Oral surgery - 36 months, 4) Orthodontics - 36 months, 5) Dental prosthetics - 36 months, 6) Endodontics and restorative dentistry - 36 months, 7) Periodontology - 36 months, 8) Oral medicine - 36 months, 9) Primary dental health care - 24 months. Additionally, specialists in dentistry were permitted to pursue subspecializations in the following narrower specialties, each with its own duration: 1) Oral implantology - 24 months, 2) Pediatric prosthetics - 12 months, 3) Reconstructive maxillofacial prosthetics - 12 months. Moreover, healthcare workers who had graduated from a Faculty of Medicine, upon completing specialization and passing a specialist exam in otorhinolaryngology and general surgery, were eligible to subspecialize in maxillofacial surgery in duration of 24 months¹³.

Recognizing the dynamic nature of changes in legal regulations gov-

erning health specializations and subspecializations in dentistry, the purpose of this paper emerged: to present the current positive and valid legal framework governing health specializations and subspecializations in the field of dentistry in the Republic of North Macedonia.

Materials and Methods

In order to achieve the defined objective, we conducted a comprehensive search of legal regulations accessible at the database of regulations and publications on the website of the Official Gazette of the Republic of North Macedonia. Our search utilized specific keywords, including “specializations,” “subspecializations,” and “dentistry.” Additionally, we analyzed regulations available on the websites of higher education institutions that offer specializations and subspecializations in dentistry. From the pool of regulations scrutinized, we selected those marked as valid or partially valid and relevant to specializations and subspecializations in dentistry.

In our study, we employed the following methodologies: legal-dogmatic method, content analysis and descriptive method.

Results

1. Legal Framework of Specializations and Subspecializations

The valid legal framework regulating specializations and subspecializations in the field of dentistry comprises legal regulations summarized in Table 1.

Table 1 Overview of Legal Framework of Specializations and Subspecializations in the Field of Dentistry

1. Law:
- The Health Care Act ⁽¹⁴⁾
2. Regulations:
- Rulebook on specializations and sub-specializations of health workers and health associates with higher education in the field of dentistry and pharmacy ¹⁵
- Rulebook on the method of recognition and the necessary documentation for the recognition of specializations and subspecializations completed abroad, as well as the method of keeping records of recognized specializations and subspecializations completed abroad ¹⁶
3. Decisions of the Government of the Republic of North Macedonia:
- Decision on the compensation for conducting theoretical teaching and practical training and for taking an exam for specializations, i.e. subspecializations in the field of medicine, dentistry, and pharmacy ¹⁷
4. Decisions of higher education institutions:
- Decision on determining criteria for selection of candidates, procedure for registration of specialization, procedure and conditions for changing the branch of specialization, adopted by Ss. Cyril and Methodius University in Skopje, Faculty of Dentistry – Skopje ¹⁸
- Decision on determining criteria for candidate selection, procedure for registration of subspecialization, procedure for approval of subspecialization, and conditions for changing the branch of subspecialization, adopted by Ss. Cyril and Methodius University in Skopje, Faculty of Dentistry – Skopje ¹⁹
5. Government programs
The program for the needs of specialist and subspecialist personnel in accordance with the network of health institutions (2023 - 2026) ²⁰

2. Eligibility for specialization and subspecialization

The right to pursue specialization and subspecialization in the field of dentistry is outlined in the Law on Health Care¹⁴. According to this legislation, health workers within the realm of dentistry are entitled to pursue specialization and subspecialization in specific branches of dentistry. The Minister of Health prescribes the delineation of these branches, their respective durations, components of the specialization practical sessions, plans and programs, as well as the procedures for conducting this experience, examination methods, and documentation requirements, including the format of specialization records. This prescription occurs subsequent

to obtaining the prior opinion of the relevant higher education institution, in conjunction with the corresponding chambers¹⁴.

Health workers operating in the field of dentistry, whether employed in public health institutions, private health institutions, other legal entities, or currently unemployed, possess the right to engage in specialization or subspecialization. Furthermore, the Ministry of Health is empowered to approve specialization or subspecialization for foreign citizens who are health workers with completed dental faculty education.

2.1. Procedure for approval of specializations and subspecializations of doctors of dentistry employed in public health institutions

The Government of the Republic of North Macedonia has adopted a comprehensive four-year program designed to address the specific personnel requirements for specialists and subspecialists in alignment with the established network of health institutions. Within this program, the determination of specialist and subspecialist personnel needs is conducted on an annual basis, having in mind factors such as the existing number and demographic distribution of specialists, as well as the waiting time recorded in the electronic list of scheduled examinations and interventions. Furthermore, the program accounts for the demand for specialist-consultative and hospital health services within the respective municipality or public health facility. Ultimately, the adoption of the program occurs by the endorsement of the Council for Specializations, a body appointed by the Minister of Health¹⁴.

Based on the aforementioned program, healthcare facilities within the network develop a professional advancement plan. The planning and approval of specialization or subspecialization for healthcare professionals are restricted to the specific branches of dentistry constituting the activities of the healthcare institution and its legal entity. Referral to specialization or subspecialization is overseen by healthcare institutions providing care, following procedures stipulated in their governing documents. Once referred, documentation verifying the fulfillment of prerequisites and approval of specialization or subspecialization in accordance with the professional advancement plan is submitted by the healthcare institution to

the higher education institution for registration purposes.

Subsequently, the public health institution endorsing the subspecialization enters into an agreement with the subspecialist, outlining mutual rights and obligations regarding the realization of the subspecialization. This agreement delineates the period during which the subspecialist is obliged to serve in the institution post-completion of the subspecialization, along with provisions for financial compensation in the event of premature departure at the subspecialist's request or due to their fault, alongside suitable guarantees for non-fulfillment of obligations towards the health institution¹⁴.

2.2. Procedure for approval of specializations and subspecializations of doctors of dentistry employed in private health institutions, other legal entities and unemployed

Healthcare workers, including health associates employed in private health institutions, other legal entities, and those currently unemployed, are eligible to apply for enrollment in specialization or subspecialization programs. These programs must align with the specialization plan endorsed by the higher education institution and require applicants to satisfy the conditions outlined in the Law on Health Care, along with additional criteria established by the higher education institution. Specifically, in accordance with the Health Care Law, dentists must have completed a probationary period, passed a professional exam, and obtained a work license. Conversely, health workers with a medical education background may pursue spe-

cialization provided they fulfill the aforementioned requirements and possess at least six months of experience in primary health care within a health center, as per the Ministry of Health's program guidelines¹⁴.

Each higher education institution develops its own regulations governing the selection process for candidates, registration procedures for specialization or subspecialization, approval procedures for specialization or subspecialization, and conditions for transitioning between specialization or subspecialization branches¹⁴.

Based on our findings, it appears that only decisions made by the Faculty of Dentistry - Skopje, a constituent part of Ss. Cyril and Methodius University in Skopje, are recognized. Acts passed by the Faculty of Medical Sciences at the "Goce Delchev" University in Shtip are not considered valid in this context.

The higher education institution issues a public announcement for the registration of candidates seeking approval for specialization or subspecialization. This announcement is published in at least two daily newspapers, providing an opportunity for health workers employed in private health institutions, other legal entities, and those currently unemployed to submit their requests for approval of specialization or subspecialization. Requests must be submitted to the higher education institution within 30 days from the date of publication of the public notice¹⁵.

Upon receiving the decision for approval, issued no later than two months from the publication date of the public announcement, health

care workers employed in private health care facilities and unemployed health care workers commence their specialist or subspecialist internships. The selection of candidates is based on a ranking list, and those who receive approval enter into an agreement with the higher education institution to establish mutual rights and obligations throughout the duration of the specialization program.

Unlike specializations, the Law on health care does not stipulate prerequisites for subspecialization registration; however, the conditions are outlined in the Regulation on Specializations and Subspecializations of Health Workers and Health Associates with Higher Education in the Field of Dentistry and Pharmacy¹⁵. According to this regulation, healthcare workers with higher education in dentistry who have completed a specialization internship and passed a specialist exam in one of the branches of dentistry can pursue subspecialization in up to two narrower subspecialties¹⁵.

3. Branches of Specializations and Subspecializations in the Field of Dentistry

The Minister of Health, following a prior opinion of the corresponding higher education institution and in collaboration with the relevant chambers, prescribes the branches of specializations and subspecializations¹⁴.

The Rulebook on Specializations and Subspecializations of Health Workers and Health Associates with Higher Education in the Field of Dentistry and Pharmacy¹⁵ serves as

the authoritative document governing the branches of specializations and subspecializations for health workers with higher education in dentistry. This by-law prescribes the duration of these specializations, the components of specialization experience, and the criteria - both organizational and personnel-related - that must be met by higher education institutions and health institutions. Additionally, it delineates the form and content of written authorizations for implementing theoretical and practical aspects of specialization internships, along with plans, programs, and procedures for carrying out the internships and taking the specialist or subspecialist exams. The Rulebook also specifies

the format for specialist and record books documenting procedures and interventions during specialization and subspecialization internships, as well as the required forms for minutes-keeping and certificates for passing specialist or subspecialist exams. Moreover, it outlines criteria pertaining to education and experience for relevant fields of specialization or subspecialization for authorized health workers, including mentors and educators.

According to the Rulebook, health workers with higher education in dentistry can specialize in the branches of specialization as outlined in Table 2.

Table 2 Branches of specializations in the field of dentistry

Branch of specialization	Duration
Dental prosthetics	36 months
Orthodontics	36 months
Oral surgery	36 months
Maxillofacial surgery	72 months
Periodontology	36 months
Oral medicine	36 months
Endodontics with restorative dentistry	36 months
Children's and preventive dentistry	36 months

The subspecializations, their duration and the conditions for which specialists can subspecialize are presented in Table 3.

Table 3 Narrower subspecialties in the field of dentistry

Subspecialization	Duration	Requirement for enrolling in the subspecialization program
Oral implantology	24 months	Completed specialization in oral surgery, dental prosthetics, periodontology or maxillofacial surgery.
Endodontics with endodontic surgery	24 months	Completed specialization in the field of endodontics and restorative dentistry or oral surgery

The duration specified for specialization and subspecialization, as outlined in the regulations, represents the minimum period within which the specialist or subspecialist is expected to complete all aspects of the internship. It is possible for specialization or subspecialization to extend beyond the planned duration until the specialist has completed all anticipated procedures and interventions detailed in the Work Log recording the latter. This extension is contingent upon the specialist acquiring the requisite knowledge and skills during the internship, as outlined in the plan and program. The programs for specializations and subspecializations include a segment common to all specialist or subspecialist programs, comprising theoretical instruction in the following areas: scientific and research methodologies, clinical decision-making, communication skills, public health principles, knowledge acquisition and dissemination techniques, ethical considerations and regulations, and health promotion strategies¹⁵.

4. Institutions providing/delivering specialization and subspecialization programs

As stipulated in the Health Care Law, specialization and subspecialization programs are conducted in higher education institutions and health institutions accredited by the Minister of Health, operating on a full-time basis and adhering to the provisions stipulated in the foretated Law and associated regulations.

The theoretical component of specialization and subspecialization programs, i.e., subspecialization for health workers in dentistry is de-

livered by accredited higher education institutions. These institutions must meet specific criteria outlined in accordance with relevant rulebook regarding organization, personnel, facilities, and medical-technical resources ⁽¹⁵⁾. Accredited higher education institutions in the Republic of North Macedonia authorized to conduct specializations and subspecializations in dentistry include Ss. Cyril and Methodius University in Skopje, Faculty of Dentistry – Skopje, and Faculty of Medical Sciences at “Goce Delchev” University in Shtip.

Health facilities where the practical component of specialization or subspecialization is conducted must also meet specific criteria established by the Rulebook ⁽¹⁵⁾, encompassing aspects such as organization, personnel, space, and medical-technical resources. Accredited health institutions in the field of dentistry in the Republic of North Macedonia include the PHI University Dental Clinical Center, “St. Panteleimon” in Skopje, and the PHI University Clinic for Surgery of the Face, Jaws, and Neck - Maxillofacial Surgery “Academician Ilija Vaskov” in Skopje. Additionally, part of the practical training may take place in other public health institutions, contingent upon agreements reached between the higher education institution and the respective health institution.

5. Method of implementation of specializations and subspecializations

The commencement of specialization or subspecialization occurs on the specified date indicated in the decision for approval issued by the higher education institution. The

implementation of the specialization or subspecialization program proceeds continuously, except in circumstances defined by the Law on Health Care, where interruptions may occur, with subsequent resumption following the conclusion of the leave period for a duration equivalent to the interruption. Specialization and subspecialization entail a combination of theoretical instruction and practical training, conducted over a designated period within corresponding higher education and health institutions¹⁵.

It's imperative for trainees, including subspecialists, to fulfill tasks outlined in the preceding practical sessions and program in order to qualify for registration in the subsequent one. A colloquium is undertaken by specialists or subspecialists no later than one month following the conclusion of each practical sessions. The specialization or subspecialization internship culminates upon the successful completion of all practical sessions as per the established program and the execution of all prescribed procedures and interventions throughout the internship duration¹⁵.

The rights and responsibilities of interns during specialization internships, as well as the tasks performed in accordance with the specialization program, are deemed equivalent to professional duties within a workplace. The intern bears personal and disciplinary responsibility for the execution or non-execution of assigned tasks.

6. Record of Specialization and Subspecialization Implementation

The documentation stemming from the execution of specializations and

subspecializations, mandatory for each specialist or subspecialist, includes:

- Specialized Record book
- Work Log detailing procedures and interventions conducted during specialization and subspecialization experiences.

The format and content of the record book and the Work Log for procedures and interventions carried out during specialization internships are prescribed by a governing by-law¹⁵.

During the specialist internship, adherence to the plan and program for specialization is paramount. All pertinent details are meticulously recorded in the specialized record book, ensuring accuracy and completeness. This includes precise documentation of the commencement and conclusion of the specialist internship, as well as the timing of each internship segment or practical sessions. Additionally, the specialization book captures information regarding procedures performed as outlined in the corresponding specialization segment, along with competencies and skills attained in accordance with the program. The specialist's attendance in theoretical teaching sessions, as per program requirements, is also recorded. Upon completion of the specialist internship, the mentor provides an assessment of the intern's performance and confirms fulfillment of conditions for specialist exam eligibility¹⁵.

The procedures and interventions executed throughout the specialization are meticulously

documented in the Work Log for Implemented Procedures and Interventions during the internship. This book ensures accurate and comprehensive data entry, particularly regarding the practical sessions title, procedure or intervention type, date, and the health facility where the procedure was conducted. Additionally, it specifies whether the procedure was carried out independently or under supervision. It is imperative for the procedures and interventions logged in the Work Log to align precisely with the specialization program content¹⁵.

Upon completion of each practical sessions, the mentor, educator, and director of the health facility where the practical sessions took place endorse the Specialized record book and the Work Log for Implemented Procedures and Interventions. Their signatures and facsimiles attest to the accuracy and completeness of the entries therein¹⁴.

7. The Role of a Mentor and Educator in Specializations and Subspecializations

7.1. Mentor

The organization and supervision of the plan and program for specializations and subspecializations are overseen by an accredited health professional, known as a mentor. This mentor must possess the requisite education and experience in the relevant specialization or subspecialization area. Throughout the implementation of the specialization or subspe-

cialization program, the mentor assumes additional responsibilities, collaborating with an authorized health worker, known as an educator, to facilitate the trainee's acquisition of skills outlined in the program. Together, they ensure the trainee's successful mastery of knowledge and skills during the specialization or subspecialization. The mentor must be employed at the higher education institution conducting the specialization or subspecialization, with authorization granted by the Minister of Health¹⁵.

During the specialization or subspecialization internship, the mentor oversees its proper execution, monitors the trainee's progress, assesses his/her knowledge and skill mastery, verifies the accuracy of data recorded in the trainee's booklet, and provides guidance to the trainee until he/she successfully passes the specialist or subspecialist exam¹⁵.

The mentor confirms the successful mastery of each part of the specialization. This confirmation allows the trainee to progress further in the specialization or subspecialization program according to the plan and program. However, if the trainee fails to successfully master a particular part of the specialization or subspecialization, the duration of the specialization is extended to allow for additional time needed to attain competency in the corresponding part, known as a "repeated practical sessions." In such cases, the trainee may be required to repeat all or part of the practical sessions as deemed necessary by the mentor. The re-

sponsibility for implementing the repeated practical sessions or part thereof lies with the trainee¹⁴.

Additionally, the mentor serves as a guide to the trainee throughout the specialization or subspecialization process, and one mentor can oversee up to six trainees simultaneously¹⁴.

7.2. Educator

The acquisition and fulfillment of specific skills outlined in the plan and program for specializations or subspecializations are conducted by healthcare specialists within health facilities under the supervision of an accredited health professional, referred to as an educator. This educator must possess the requisite education and experience in the relevant specialization or subspecialization area (14). The authorized health worker acting as an educator should be employed at the designated health facility where the practical component of specialization or subspecialization occurs, with authorization granted by the Minister of Health¹⁵.

Specialists are permitted to perform certain tasks, or indicate them, within their specialized healthcare area, including subspecializing, but only under the supervision of the educator¹⁴.

Furthermore, in collaboration with the mentor, one educator can oversee a maximum of three trainees during the parts of the specialization or subspecialization internship for which they are designated. He/she confirms the mastery and fulfillment of individual skills outlined in the plan and program for

specializations or subspecializations¹⁴.

Provisions for the revocation and termination of the mentor's and educator's authorization are outlined in the Health Care Law.

8. Financing of Specializations and Subspecializations

The compensation for the execution of specialization or subspecialization programs is established by the Government of the Republic of North Macedonia, based on recommendations from the Minister of Health. The relevant sub-legislative measure governing this compensation is the Decision on Compensation for Theoretical Teaching, Practical Training, and Taking Exam for Specializations or Subspecializations in Medicine, Dentistry, and Pharmacy¹⁷.

Furthermore, as outlined in the Law on Health Care, the compensation for specialization or subspecialization of healthcare workers employed in private health institutions, other legal entities, and the unemployed is set at 20% lower than the compensation provided to healthcare workers employed in public health institutions¹⁴.

The total amounts of fees for carrying out the specialization, i.e. subspecialization, according to the branches of specialization, i.e. subspecialization and the different categories of specialists, i.e. subspecialists, is shown in Table 4.

Table 4 Total amount of fees for the implementation of the specialization, that is, the subspecialization

Branch of specialization	Persons employed in public health institutions	Persons employed in private health-care facilities, other legal entities and the unemployed	Foreign citizens
Dental prosthetics	5,000 euros	4,000 euros	12,000 euros
Orthodontics	5,000 euros	4,000 euros	12,000 euros
Oral surgery	5,000 euros	4,000 euros	12,000 euros
Maxillofacial surgery	8,000 euros	6,400 euros	16,000 euros
Periodontology	3,000 euros	2,400 euros	9,000 euros
Oral medicine	3,000 euros	2,400 euros	9,000 euros
Endodontics with restorative dentistry	3,000 euros	2,400 euros	9,000 euros
Children's and preventive dentistry	3,000 euros	2,400 euros	9,000 euros
Branch of subspecialization			
Oral implantology	3,000 euros	2,400 euros	6,000 euros
Endodontics with endodontic surgery	3,000 euros	2,400 euros	6,000 euros

The higher education institution retains 50% of the compensation funds allocated for each individual specialist or subspecialist for the execution of their specialization or subspecialization. The remaining 50% of these funds are then distributed and disbursed to the respective public health institutions where the specific skills outlined in the plan and program for specializations or subspecializations are mastered and fulfilled. This distribution is facilitated through pre-existing agreements between each public health institution and the higher education institution¹⁴.

It is mandated by law that both the higher education institution and the health institution utilize the funds received for the implementation of specialization or subspecialization to foster the advancement of higher education or healthcare activi-

ties, respectively. Additionally, these funds are earmarked for compensating mentors and educators, as well as for conducting language proficiency assessments for specialists¹⁴.

9. Passing the Specialist or Subspecialist Exam

Following the completion of all procedures and interventions outlined in the plan and program for specialization or subspecialization, and preceding the specialist or subspecialist exam, the specialist or subspecialist is required to undergo a pre-examination final colloquium. This colloquium serves as a prerequisite for the specialist or subspecialist exam. The specialist or subspecialist exam must be taken no later than six months from the conclusion of the specialization or subspecialization internship. To take

the exam, the specialist or subspecialist must submit an application to the higher education institution at least 30 days prior to the exam¹⁵.

Both the pre-examination colloquium and the specialist or subspecialist exam are conducted by an examination committee assembled by the higher education institution. This committee comprises three members and an appropriate number of deputies. Notably, a member of the examination committee cannot serve as the mentor involved in the implementation of the specialist or subspecialist internship. However, the mentor can attend the exam¹⁵.

Upon successfully passing the specialist or subspecialist exam, the trainee attains the professional designation of specialist in the relevant specialization branch or subspecialist in the relevant subspecialization branch. Additionally, the higher education institution issues a specialist certificate to the individual¹⁵.

The Rulebook delineates various forms for documenting the specialist or subspecialist exam proceedings, as well as the issuance of specialist or subspecialist certificates. Moreover, it outlines conditions for exam completion and addresses potential scenarios if a specialist or subspecialist fails the exam¹⁵.

Discussion

In 2012, a new Law on Health Care was enacted, which has been subsequently amended and supplemented multiple times and remains in effect¹⁴. In compliance with the legal regulations, in the same year, the

Rulebook on specializations and subspecializations of health workers and health associates with higher education²¹ was issued, which provided for specializations and subspecializations across all fields of medicine, dentistry, and pharmacy. This Rulebook retained the same specializations and subspecializations as those outlined in the 2011 Rulebook.

In 2019, a new Rulebook was enacted on specializations and subspecializations of healthcare workers with higher education in the field of dentistry and pharmacy, as well as healthcare associates with higher education²². This Rulebook exclusively regulated specializations for health workers with higher education in dentistry and pharmacy, considering that in 2015, a separate Rulebook had been adopted to regulate specializations and subspecializations for health workers with higher education in the field of medicine²³. The 2019 Rulebook maintained the same specializations and subspecializations as its predecessors from 2011 and 2012. However, an amendment was made to the 2019 Rulebook in the same year, specifically regarding the duration of specialization in maxillofacial surgery. Initially set at 48 months, the amendment extended this duration to 60 months.

Two years later, in 2021, another new Rulebook was adopted on specializations and subspecializations of healthcare workers and healthcare associates with higher education in the field of dentistry and pharmacy¹⁵, which remains in effect.

In 2012, a Rulebook was adopted regarding the method of calculat-

ing the weighting of points based on the average success of candidates achieved in higher education and their success in subjects relevant to the specialization area. This Rulebook, along with its amendment in 2022, was adopted by the Minister of Health. However, it has not been published in the “Official Gazette of the Republic of North Macedonia”. This lack of publication contradicts Article 52 of the Constitution²⁴, which stipulates the obligation to publish laws and other regulations in the “Official Gazette of the Republic of North Macedonia”. Additionally, it is not in line with the Law on the publication of laws and other regulations and acts in the “Official Gazette of the Republic of North Macedonia”²⁵.

Furthermore, in our study, based on the available data from official web pages, no decisions were found from the higher education institution “Goce Delchev” University in Shtip that regulate specializations and subspecializations. This indicates the lack of transparency of certain higher education institutions that provide health specializations in the field of dentistry.

It is important to note that the procedure for approving specialization or subspecialization differs depending on whether the individual is employed in a public health institution, private health institution, other legal entity, or is unemployed. These differing procedures are regulated by the Law on Health Care and its associated by-laws. Notably, the Law on health care does not specify the procedure for approving specialization or subspecialization for foreign citizens.

As delineated by the Law and the Rulebook^{14,15}, the responsibilities regarding the implementation of health specializations and subspecializations are divided between higher education institutions and health institutions. The higher education institution is tasked with overseeing the theoretical component of specialization and subspecialization programs, while the practical aspect is managed by the health institution. This legislative intent led to the allocation of distinct rights and obligations stemming from the approval and execution of specializations and subspecializations. Accordingly, the higher education institution issues decisions approving specializations or subspecializations, establishes agreements to regulate trainees’ rights and obligations, appoints mentors, organizes theoretical instruction, and forms committees for conducting pre-examination final colloquia and specialist exams. Conversely, health institutions are responsible for appointing educators to facilitate the acquisition of individual skills outlined in the specialization program, which occurs during the provision of health services. Additionally, they maintain records of specialists’ attendance and perform other related administrative tasks.

Although a total of 8 specializations in the field of dentistry are stipulated, only some of the specialists can subspecialize in narrower subspecialties. Namely, for specialists in the fields of orthodontics, oral medicine, and children’s and preventive dentistry, there is no opportunity to pursue subspecialization in narrower subspecialties.

In the European Union and European Economic Area (EU/EEA) three member states have no recognized dental specialties and twelve have four or more. Orthodontics is recognized in most countries and oral surgery in over 60%. Other common specialties are periodontics and pedodontics. Variation in the numbers of specialties and specialists between individual countries is great and can partly be explained by oral health care systems and traditions to study abroad in some countries. Most existing specialties seem to have emerged from professional interests. Only two, orthodontics and oral surgery, are formally recognized by the European Commission (EC). The new Directive on recognition of professional qualifications has left the recognition of additional dental specialties to be negotiated between individual Member States. This calls for better Pan-European cooperation in dental matters in the future²⁶. In 2023, the situation is similar. Namely, up to a total of 15 different specialties are officially recognized in 20 out of the 30 countries of which the European Economic Space plus the United Kingdom (UK). Orthodontics (90%) and Oral Surgery (81%) are the two most frequently recognized specialties²⁷.

The Minister of Health, following a prior opinion of the corresponding higher education institution and in collaboration with the relevant chambers, prescribes the branches of specializations and subspecializations, their durations, the components of specialization practical sessions, plans and programs, as well as the methods for conducting the experience, examination pro-

cedures, and the format of specialization and record books for procedures performed and interventions carried out during specialization internships¹⁴. Also, the compensation for the execution of specialization or subspecialization programs is established by the Government of the Republic of North Macedonia, based on recommendations from the Minister of Health. This indicates the increased control of the state regarding the regulation of health specializations in the field of dentistry, burdened with numerous legal acts.

Conclusions

In conclusion, an analysis of the gathered data has revealed frequent revisions in the legal framework governing health specializations and subspecializations in dentistry in the Republic of North Macedonia. These alterations in law and by-laws suggest a recurrent re-norming process, potentially resulting in healthcare workers' inadequate understanding of the legal framework regarding specializations and subspecializations. Given the rapid evolution of scientific knowledge in medicine and dentistry, we advocate for a reduction in excessive norming as well as for higher education institutions to adapt plans and programs in alignment with emerging scientific insights.

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