

## OPINION

Prof. Galina Stamova Tchaneva, PhD

FPH "Prof. Dr. Tz. Vodenicharov, MD" of the Sofia University

Appointed as a member of the Scientific Jury by Order No. R-109-154 of  
27.03.2026 of the Rector of the Medical University

"Prof. Dr. Paraskev Stoyanov" Varna

Subject: Procedure for acquiring the educational and scientific degree "Doctor" with candidate Elka Dancheva Kostova - doctoral student in full-time study in the doctoral program "Health Care Management" in the professional field 7.4. Public Health, with the topic of the dissertation: "Modern competencies of the X-ray laboratory assistant when working with digital dental imaging" with scientific supervisor: Assoc. Prof. Svetlana Peneva Angelova, PhD

In connection with the procedure, the following documents are submitted:

- Dissertation
- Abstract – in Bulgarian and English language
- Declarations of originality, reliability of the presented data
- List of scientific publications
- CV, copy of protocols and diplomas

The submitted documents on paper and electronic media are in accordance with the procedures for acquiring the ESD "Doctor" and the Regulations for the Development of the Academic Staff of MU "Prof. Dr. Paraskev Stoyanov" – Varna.

### **Brief biographical data about the doctoral student**

Assist. Elka Kostova is constantly training and developing professionally:

- 2001 – X-ray laboratory assistant at the Medical College – Medical University – Plovdiv
- 2018 – Bachelor’s degree in “Healthcare Management” at Medical University “Prof. Dr. Paraskev Stoyanov” – Varna
- 2019 – Master’s degree in “Healthcare Management” at Medical University “Prof. Dr. Paraskev Stoyanov” – Varna
- 2022 – Specialty in “Public Health”
- 2023 – Accepted as a full-time doctoral student in the specialty “Healthcare Management”

The professional development of Asst. Elka Kostova began in 2001 as an X-ray laboratory assistant in various medical institutions in the city of Varna – MDL under OD, DCC 1, DCC "Chaika". Since 2020, she has been an assistant at the Medical College of MU - Varna, and since 2024 - Head of the Educational Sector "X-ray Laboratory Assistant" at the Medical College of MU - Varna.

### **Relevance of the dissertation**

Imaging studies are a major part of the diagnostic process in medical institutions, which is why the role of X-ray laboratory assistant is essential. The digitalization and modernization of imaging diagnostics studies in recent years has placed serious demands on these specialists. The training and acquisition of professional skills by X-ray laboratory assistant must be carried out in appropriate conditions and didactic tools. Changes in the development of the professional competencies of X-ray laboratory assistant must be carried out on the basis of in-depth scientific research and scientifically based recommendations. That is why the dissertation work developed by Elka Kostova points out the problems and direction for the development of the training of X-ray laboratory assistant.

## **Structure of the dissertation**

The dissertation is structured in five chapters: Chapter One – Literature Review – Relevance of the Problem; Chapter Two – Purpose, Objectives, Methods and Organization of the Study; Chapter Three – Results and Discussion of the Survey Conducted Among Teachers, Students, Medical Specialists and Personnel Users; Chapter Four – Practical Approaches; Chapter Five – Conclusions, Recommendations and Suggestions, Contributions; Conclusion, References and Applications.

The volume of the dissertation includes 178 standard pages, with the results clearly presented in 67 figures, 14 tables and 5 applications. The literature used covers 232 titles, of which 36 in Cyrillic and 196 in Latin.

In the literature review, the doctoral student provides a historical overview of the nascency and development of dental imaging. The modern methods, techniques and technologies in dental imaging are described. The doctoral student presents modern dental X-ray systems, such as a dental X-ray device for sectoral radiographs, for panoramic radiographs and dental cone beam computed tomography, which are based on modern technologies and provide significant safety for the patient.

The doctoral student turn special attention to the professional training and competencies of X-ray laboratory assistants, characterizing the essence and specifics of training, as well as regulatory requirements.

The literature review uses modern sources of scientific information, which are cited correctly. The sources of the visual images included in the text are also cited.

The goal and objectives of the dissertation are clearly and specifically formulated, corresponding to the topic chosen by the doctoral student and are aimed at studying the modern competencies of X-ray laboratory technicians in

relation to their work with dental imaging diagnostics, while determining the development guidelines dictated by the introduction of digitalization and artificial intelligence in all areas of healthcare.

In terms of methodology, three working hypotheses, subject and object of the study have been defined. The study included a total of 317 respondents, who were distributed in the following groups: first group – teachers who train X-ray laboratory assistants; second group – students of the specialty “X-ray laboratory assistant”; third group – X-ray laboratory assistants – practicing the profession; users of personnel; experts from the fields of “Radiology” and “Dental Medicine”. The criteria for inclusion and exclusion of respondents in the study are clearly and precisely defined. The study was carried out in four Medical Colleges in the country – Varna, Sofia, Plovdiv and Pleven. The medical institutions in which the study was conducted are a significant number on the territory of Varna, as well as in some other smaller cities. The doctoral student presents the stages of the study, which include five stages. The methods used are: documentary method; sociological methods – questionnaire survey; statistical methods. Four questionnaires have been developed.

The results are presented visually and analytically in the third chapter. The doctoral student shows the socio-demographic characteristics of the surveyed groups of respondents, making it noticeable that the majority of teachers are women, as well as those working in medical institutions and students who are studying. The results show a good trend, unlike many other specialties, that the age of a significant part of the working X-ray laboratory assistants is up to 40 years. Regarding the preparation of X-ray laboratory assistant for work in the field of dental imaging diagnostics, the results from all groups of surveyed individuals show a need to improve their training.

In the fourth chapter "Practical Approaches" a program for an elective course "Digital Dental Imaging" is presented, the goal of which is for students to acquire in-depth knowledge and practical skills related to the application of modern digital technologies in dental imaging.

The dissertation uses a scientific style and language to reveal the problems in the training and professional development of X-ray laboratory assistants for professional realization in the field of dental imaging diagnostics.

### **Contributions of the dissertation work**

The contributions of the dissertation work have theoretical and cognitive significance and practical and applied nature:

- A comprehensive and systematic study has been conducted on the competencies of X-ray laboratory assistants when working with digital dental imaging

- The main challenges in the preparation of X-ray laboratory assistants in relation to digital dental imaging have been identified.

- The importance of simulation techniques has been established as an effective addition to the practical training of X-ray laboratory assistants in conditions of digitalization.

- A curriculum for the elective discipline "Digital Dental Imaging" has been developed.

- A specialized electronic library with real, anonymized dental images has been created.

The conclusions are analytically and synthetically presented, defining the main problems in the training of X-ray laboratory assistants and their preparation for working with digital dental imaging technologies. The doctoral student has skills for the correct use of scientific data and information, their processing, analysis and presentation.

The abstract of the dissertation includes the main elements of the research conducted. The doctoral student presents 2 publications related to the topic of the dissertation.

#### Conclusion

In conclusion, I believe that the dissertation on the topic: "Modern competencies of the X-ray laboratory assistant when working with digital dental imaging" fully meets the requirements of the Regulations for the development of the academic staff of MU - Varna, therefore I give a positive assessment and propose to the members of the scientific jury to make a decision to award the educational and scientific degree "doctor" to Elka Dancheva Kostova in professional field 7.4. Public health and scientific specialty "Healthcare management".

15.04.2026 г.

Prepared the opinion

Prof. Galina Tchaneva, PhD

Заличено на основание чл. 5,  
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