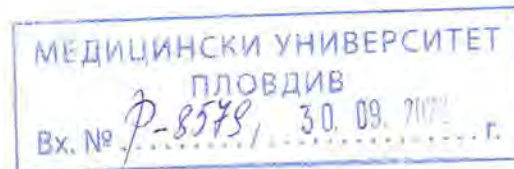


REVIEW



By Associate Professor Veselina Kondeva Kondeva-Glavinkova, DMD, PhD, Department of Pediatric Dentistry, FDM, MU - Plovdiv, member of the Scientific Jury based on Order No. R-2021/30.08.2022 of the Rector of Medical University – Plovdiv.

On a dissertation paper for the award of the educational and scientific degree "Doctor" in the doctoral program "**Social medicine and organization of health care and pharmacy**", field of higher education 7. Health care and sports, **professional direction 7.1. Medicine.**

Author: Tihomira Mitkova Schiller

Department: Social Medicine and Public Health, Faculty of Public Health, MU - Plovdiv

Topic: "Medical errors in dental practice – a comparative analysis and a dental practice risk management model"

Research supervisor: Assoc. Prof. Nina Musurlieva, DD, PhD

General presentation of the procedure and the PhD student

According to Art. 32 of the Regulations for the implementation of the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB) and Order No. R-2021/30.08.2022 of the Rector of Medical University - Plovdiv at the first meeting of the Scientific Jury, I have been appointed to prepare a review as a member of the Scientific Jury of the dissertation work of Dr. Tihomira Mitkova Schiller. The presented set of materials on paper and electronic media is in accordance with the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at Medical University - Plovdiv and includes the following documents:

- Application to the Rector of MU-Plovdiv for the opening of a procedure for defence of a dissertation work;
- Summary in European format;
- Notarized copy of the relevant higher education diploma;
- Deduction order with right of defence
- Record of a passed exam for doctoral minimum;
- Minutes from the preliminary discussion of the dissertation work and the decisions; taken on the start of the procedure and on the composition of the scientific jury;
- The dissertation work;

- The Abstract;
- List of scientific publications on the topic of the dissertation;
- Copies of scientific publications;
- List of participations in scientific forums;
- Certificate of completed studies at the Doctoral School of MU – Plovdiv;
- Declaration of originality and authenticity of the attached documents;

The presented materials are fully in accordance with the requirements of this procedure.

I have no remarks or comments on the documents.

Brief biographical data of the PhD student

Dr. Tihomira Schiller completed her secondary education at Foreign Language High School “Prof. Dr. Assen Zlatarov ”- Haskovo. From 2008 to 2014 she studied Dental Medicine at the Faculty of Dental Medicine of Medical University - Plovdiv and completed her higher education with excellent marks from her semester and state exams.

Dr. Schiller's professional career began in 2014 as a dentist at "Dr. Anton Petev" Dental Practice in Haskovo where she practised until 2017. In the period 2018-2020, she gained professional experience as a dental doctor in management positions at the Hansen Dental Center in Stuttgart, Germany. Since November 2020, Dr. Schiller has specialized in Orthodontics in the Orthodontic Practice "Dr. Nina eainig" in Wendlingen, Germany.

In June 2021, she was enlisted as a doctoral student of independent preparation at the Department of Social Medicine and Public Health at Medical University-Plovdiv with Scientific supervisor - Assoc. Prof. Dr. Nina Musurlieva.

She is fluent in German and English and holds the following certificates: DSD level C1 and Cambridge Academy level C1.

Relevance of the topic and appropriateness of the set goals and tasks

The dissertation paper examines and analyzes a significant problem regarding medical errors in dental practice, a problem that is not isolated to Bulgaria -it is observed both in Europe and worldwide. The dentist profession is not only humane, but also high-risk, with great social significance. It is legally regulated, subject to state control and the requirements for its practice are high. In its exercise, even the smallest error could lead to adverse consequences and a fatal outcome for the patient.

In the last few years, society has encountered numerous examples of imperfections in the health care system. The crisis in healthcare, deepening due to the prolonged emergency

situation (Covid-19), the lack of specialized healthcare in small settlements, the dissatisfaction of health workers due to lack of staff, inadequate remuneration and working conditions, create a serious prerequisite for demotivation. This directly and negatively affects both the quality of work of medical specialists and the doctor-patient relationship and leads to an increase in the risk of medical errors. There is a tendency to undermine public trust in the health care system. It would be of great public interest to create a risk management model in dental practice. In order to build a better functioning healthcare system, a number of factors are necessary: participation of the class organization - Bulgarian Dental Union (BZS); creation of a register accessible to all medical workers; increasing the quality of postgraduate training and improving communication between members of the medical team and doctor-patient. All this makes the dissertation work of Dr. Tihomira Schiller relevant, contemporary and useful for dental science and practice.

Knowledge of the problem

Dr. Schiller shows excellent knowledge and theoretical training. The literature review is thorough, comprehensive, written in a good scientific style and allows comparative analysis of the results of own studies with similar ones from the scientific literature. The literature reference is modern and up-to-date. The extensive overview of the topic shows that the doctoral student knows the problem in detail and analytically evaluates the data from the scientific literature. The conclusion of the review emphasizes the unsolved problems on the topic and points to the purpose and tasks of the dissertation work.

Characterization and evaluation of the dissertation work

The dissertation work of Dr. Tihomira Schiller submitted to me for review is the personal work of the doctoral student and contains all the necessary sections, in accordance with the requirements: introduction, literature review, aim and objectives, material and methods, results and discussion, main conclusions, contributions of dissertation, bibliography and appendices.

The dissertation contains 149 pages, 7 tables, 44 figures and 42 appendices. The bibliography includes 211 literary sources, of which 25 are in Cyrillic and 186 are in Latin. The dissertation work was discussed and referred for defense by the extended departmental council of the Department of "Social Medicine and Public Health" at MU-Plovdiv on 29.06.2022.

The literature review is structured properly, written in a very good scientific language.

Dr. Schiller has done a detailed and thorough critical analysis of the literature, including debatable and unresolved issues.

The aim of the dissertation is to study and compare the attitude of the dental doctors who have completed their education and practice in Bulgaria and those who have graduated and work in Germany to the topics of "Patient Safety" and "Medical Error".

In fulfillment of the goal, four tasks are set. The goal and the tasks of the dissertation work are formulated precisely and clearly which allows for the successful realization of the set goal and contributes to the enrichment of knowledge on this problem.

Sociological methods and modern statistical methods are used for the dissertation work.

In January 2020, a pilot study was conducted in which 40 dentists from four regional cities - Sofia, Plovdiv, Varna, Burgas and 30 dentists from the provinces of Baden-Württemberg and Bavaria participated. Through the pilot study, the methodology for collecting the information is approved and refined and the effectiveness of the chosen method for collecting information is tested. In order to fulfill the objectives of the dissertation work, 351 doctors of dental medicine were monitored: 137 completed their higher education in Bulgaria, and 149 completed and practise their profession in Germany. 65 questionnaires were excluded from the study because they did not meet the basic criteria, that the respondents had completed their studies in Bulgaria or Germany and were working in the respective country. The processed and analyzed data items are 286. An electronic questionnaire was used, including twenty-five questions. The questions are divided into the following sections: characteristics of the contingent; the role of education and postgraduate qualification in acquiring knowledge about errors; willingness to share information about mistakes made; determinants of error; blame culture and reporting of medical malpractice.

The obtained results are well presented, illustrated with tables and figures, with presented statistical reliability and dependencies. These have been thoroughly analyzed and compared with data from similar studies reported by other authors.

Dr. Schiller proves that the dental doctors from the Bulgarian sample have acquired sufficient knowledge during their studies on the topics related to patient safety, but they do not feel more prepared about the causes of medical error compared to their German colleagues.

The results regarding communication between team members, as well as doctor-patient communication show that the dental professionals surveyed were more likely to share with the patient about an incident caused by themselves, but would not comment on one caused by their colleague. Also, dental doctors who graduated and work in Bulgaria are more willing to admit to the patient about a mistake made by their colleague, and this can be interpreted as a

higher culture of trust and openness. This shows a very good level of communication between the members of the medical team for both countries, as well as the presence of trust in the superior.

There is a higher relative share of dental doctors in both Bulgaria and Germany, who believe that the lack of regular breaks during work, as well as fatigue as a result of overtime work, increase the risk of making a medical error. Therefore, reducing overtime, and thus reducing fatigue among medical staff, is an important strategy to increase patient safety.

Regarding the culture of accusation, the author proves that the dentists from Bulgaria and Germany have expressed similar positions, and the majority of them are of the opinion that even the best specialists can make mistakes and that this is not a sign of incompetence. The respondents in Germany would report a medical error even when it did not result in harm to the patient, and reporting medical errors can serve an educational purpose. After the analysis of the survey conducted and the conclusions drawn, the need for a structured risk management model in the dental practice is clearly revealed. The doctoral student proposes, developed on the basis of the survey conducted among the Bulgarian dentists, a model for risk management in dental practice, which includes 10 main units, through which to improve the safety of patients and the quality of the manipulations:

1. Written definition of the processes and preparation in a Practice Manual;
2. Introduction of written rules for the implementation of hygienic measures in the practice, disinfection and sterilization of instruments, disinfection of hands;
3. Rules for collaboration and coordination with other specialists;
4. Recognition of patients with high health risk and medical emergencies in the dental practice;
5. Obtaining patient feedback;
6. Providing information to the patient and obtaining informed consent;
7. Keeping detailed patient records;
8. Additional training and postgraduate qualification;
9. Error and risk management;
10. Holding regular meetings with the team;

Based on her own research into dentists' patient safety awareness and training and their attitudes and preferences regarding refresher courses, the author has reasoned to propose a postgraduate training program that could be used not only for general practitioners and dentists, but also for all health professions. The program can also be used to train students as an optional discipline, thus complying with the WHO recommendation for training in patient

safety at the earliest stage. As a result of the training, students would master the basic concepts, conceptual and theoretical approaches to the process of ensuring patient safety. They would build basic skills for correctly assessing the interests of the various subjects in medical practice, for finding ways to optimize the communication process and, last but not least, for applying the acquired knowledge in their professional practice.

As a result of her own research and based on world literature, Dr. Schiller formulates recommendations, namely:

1. The dental faculties to introduce an optional subject for fifth-year dental students on the topic "Patient safety in dental practice".
2. Bulgarian Dental Union and the Bulgarian Medical Union to create an anonymous registry for reporting medical malpractice for educational purposes. To be organized postgraduate trainings, lectures, seminars on "Patient Safety" and "Medical Error".
3. Dental doctors to implement a risk management model in their practice to increase patient safety and reduce the risk of medical error.

There are nine conclusions. They are clearly and precisely formulated and logically derived from the results obtained and their adequate interpretation.

Contributions and significance of the development for science and practice

2 contributions of a theoretical nature and 3 contributions of a practical-applied nature were formulated.

Assessment of the dissertation publications

In connection with her dissertation, Dr. Tihomira Schiller has published three full-text articles. Dr. Schiller is the first author of all three publications.

Personal participation of the doctoral student

The dissertation work was carried out entirely by the doctoral student, under the guidance of the supervisor, which is confirmed by the attached list of publications and participations. The personal merits of the doctoral student in connection with the realization of the dissertation work are indisputable. Her personal work is the overall activity of conducting the studies, collecting, processing and analyzing the data, formulating conclusions and contributions and the final shaping of this completed dissertation work.

Abstract

The abstract is designed according to all requirements and adequately presents, in a reduced form, the content and results of the dissertation work.

Critical remarks

I have no objections to the candidate. I welcome the concise presentation of the material and recommend that Dr. Schiller popularize the results in the form of lectures included in the continuing education program for doctors of dental medicine at BDU.

CONCLUSION

The dissertation contains scientifically-applied results that represent an original contribution to science and meet all the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of LDASRB and the relevant Regulations of MU - Plovdiv. The presented materials and dissertation results fully correspond to the specific requirements of MU - Plovdiv.

The dissertation shows that the doctoral student, Dr. Tihomira Mitkova Schiller, possesses in-depth theoretical knowledge and professional skills, demonstrating qualities for independent conduct of scientific research.

Due to the above, I confidently give my positive assessment for the conducted research on the thesis work on the topic: "Medical errors in dental practice – a comparative analysis and a dental practice risk management model", the abstract, the achieved results and contributions, and propose to the honorable scientific jury to award the educational and scientific degree "Doctor" to Dr. Tihomira Mitkova Schiller in the specialty "Social Medicine and Organization of Health Care and Pharmacy".

In charge of the Opinion statement:



Заличено на основание
Чл.5 §1, б. "В" Регламент (ЕС)2016/679

As.Prof. Veselina Kondeva, DMD, PhD

25.09.2022

Plovdiv