

## **Statement**

by

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according to order of the Rector of MU Varna № P 109-174/ from 6.06.2024.

ABOUT

dissertation of

**D-r Boris Sashev Valkov**

– PhD student in Department of Conservative dentistry and Oral pathology, FDM-Varna

Topic: **„Study of the properties of temporary filling materials“,**

for the award of educational and scientific degree "Doctor" in the scientific specialty  
"Therapeutic Dentistry" with scientific supervisor:

Assoc. Prof. Miglena Balcheva – Eneva, MD, PhD, FDM Varna

### **Relevance of the topic:**

Temporary filling materials are placed for a shorter time in the oral cavity, on the hard dental tissues. They are usually made of eugenol-based, calcium sulfate-based and polyacrylic acid-based materials. There are certain requirements for them to ensure adequate protection of the pulpo-dentinal complex.

**The choice of topic is relevant**, as not only the antimicrobial qualities of the materials for temporary obturation were studied, but also the microleakage of the materials as well as their sensitizing potential. The PhD student approached the topic in a complex and responsible manner.

#### **Knowledge of the problem**

The PhD student examines the literature data characterizing the requirements for temporary filling materials and the different types of materials. In separate sections, data on microleakage around temporary fillings, their influence on cracks and fractures of hard dental tissues during endodontic treatment and their sensitizing potential are well analyzed.

#### **Structuring the dissertation work**

The analysis of the data in the literature review reflects the PhD student's excellent awareness of the problem, which is the basis for correctly formulating the unsolved problems and correctly defining the purpose and tasks of the dissertation. Aim, tasks and research methods, results and summary of the results follow.

#### **Research methodology. Aim, tasks, material and methods**

The purpose of the dissertation is formulated in accordance with the lack of data in the Bulgarian literature regarding the study of the properties of the materials for temporary filling materials and their abilities for the preservation of HDT and sealing of the teeth/cavities during multi-stage treatment.

The three tasks logically follow the idea, allowing the research to be carried out.

The materials and methods are correctly selected and adapted to the aim and the tasks of the dissertation.

The statistical methods used are excellently selected and allow a correct analysis of the obtained data and their presentation.

### **Results and discussion**

The results and discussion are presented correctly and in detail and again reflect a thorough knowledge of the problem by the PhD student.

### **Conclusions and contributions**

9 conclusions have been formulated, reflecting the results of the set tasks of the dissertation, of which the following are of particular importance for practice:

- When eugenol was combined with ZnO, the results overlapped to some extent with eugenol alone.
- ZnO shows antimicrobial activity against *E. coli*, *C. albicans* and *K. pneumoniae*.
- The lowest microleakage values are observed around the light-curing temporary filling materials, both for the short-term and after a longer period.
- Zinc is the most common sensitizer among the ingredients of temporary filling materials.
- Acrylates and methacrylates often cause cross-sensitivity.

The contributions of the dissertation work are also formulated, of which the innovations in the dissertation are worth noting:

1. The antibacterial properties of temporary filling materials were investigated for the first time.
2. Sensitization to temporary filling materials was investigated for the first time with the proposed panel of diagnostic allergens.

## Conclusion

The problem selected and investigated by **Dr. Boris Sashev Valkov** is relevant for modern medical science and practice. Dr. Valkov knows the modern specialized literature and demonstrates qualities and skills for independent conducting of scientific research. The scientific work is well structured, with properly selected methods and reliable results. The dissertation is proof that the PhD student has in-depth theoretical knowledge and professional skills in the field of Dentistry. He also has competences for independent and co-authored scientific research.

The dissertation contains original and confirmatory contributions, and I consider the data from the obtained results and their interpretation, as well as the presented publications related to it, to be the personal work of the author.

The dissertation meets all the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria (ZRASRB), The Regulations for application of ZRASRB and the Regulations of MU-Sofia.

In conclusion: I give a positive assessment of the dissertation on the topic

**„Study of the properties of temporary filling materials”** and I will vote "YES" for **Dr. Boris Sashev Valkov** to acquire the educational and scientific degree "Doctor" in the scientific specialty "Therapeutic Dentistry".

Sofia, 25.06.2024.

Assoc. Prof. Assya Zaharieva Krasteva – Panova, MD, PhD, DSc

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