

STATEMENT

by

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**Member of the scientific jury by order № P-109-30 / 30/01/2024 of the Rector
of MU – Varna**

On dissertation for awarding the educational and scientific degree

“Doctor of Philosophy”

**Topic: Investigating the role of marginal adaptation of indirect
restorations as a plaqueretentive factor and its influence on the
attachment level**

Sphere of higher education: 7. Health and sports

Professional field: 7.2. Dental Medicine

Scientific specialty: Therapeutic Dentistry

Author: Sabina Plamenova Keremedchieva

Form of doctorate programme: regular

Department: Periodontology and dental implantology, FDM, MU – Varna

Scientific supervisors: Prof. Stefan Vasilev Peev, DMD, PhD, DSc

Assoc. Prof. Angela Zdravkova Gusiyska, DMD, PhD

GENERAL PRESENTATION OF THE PROCEDURE AND THE PHD STUDENT

The presented set of documents and materials is prepared correctly in compliance with the requirements of the LDASRB, the Regulations for its implementation, art. 69 of the Regulations for the development of the academic staff at the MU – Varna, and includes:

1. Enrollment order № P-109-37 / 31/01/2020;
2. European form of CV signed by the author;
3. Copy of the diploma of completed Master's degree;
4. Doctoral minimum exam reports – in the specialty and in foreign language;
5. Protocol from the Department's Council №107 / 18/01/2024 with positive decision on the readiness for defense;
6. Deduction order № P-109-30 / 30/01/2024 for the right to defense;
7. List of publications related to the topic of the dissertation, signed by the author;
8. Copies of the same publications;
9. Dissertation;
10. Abstract;
11. Declaration of credibility of data and of registered scientific profiles;
12. Declaration of registered scientific profiles;
13. Similarity reference;
14. Reference for registered scientific profiles.

Biographical data of the PhD student

Dr. Sabina Plamenova Keremedchieva is born in Varna on September 11th 1992. She graduated from First Language high school in Varna in 2011. She obtained a Master's degree in Dentistry at Medical University of Varna (diploma №004910) in 2018. Currently, she specializes in "Periodontology and diseases of the oral mucosa". In the period 2018-2019, Dr. Keremedchieva has been working as honorary assistant professor, and from 2019 until now she is a full-time assistant professor in the Department of Periodontology and dental implantology at the Faculty of Dental Medicine, MU – Varna, taking part in the educational course of the subject "Periodontology and diseases of the oral mucosa", in Bulgarian and English.

CHARACTERISTICS AND EVALUATION OF THE DISSERTATION

Relevance of the topic

Regardless of the fact that variety of measures are taken worldwide to preserve dental and periodontal health – preventive programs, training and motivation, introduction of new materials and innovative work techniques, the result is still unsatisfactory and the share of people with dental and periodontal diseases, is extremely high.

Therefore, dissertation like this one, researching the possibilities to restore Class II cavities with subgingivally located gingival floor, aiming to improve marginal adaptation and preserve the clinical attachment level, is extremely interesting and relevant.

Analysis of the structure of the dissertation

The dissertation of Dr. Keremedchieva is structured according to the requirements of the Regulations for the development of the academic staff at the MU – Varna. It consists of 209 standard pages and it is illustrated with 99 tables, 118 figures and 9 applications. The bibliography contains 283 literary sources in Latin; 129 (45.58%) of them are published in the last 10 years.

Problem awareness

The introduction is short and concise. **The literature review** presents the available information on the selected topic of marginal adaptation of dental restorations. The types of dental crown defects and applied treatment approaches are discussed. In direct restorations, special attention is paid to the characteristics of dental composites, adhesive bond strength and polymerization shrinkage, and in indirect restorations – to impression and execution techniques, and to fabrication and cementation materials. Emphasis is placed on the risk of microleakage and the possibilities of optimizing marginal adaptation in order to reduce the role of dental restorations as plaque-retentive factors, contributing to the development of periodontitis.

Aim and tasks

The aim of the dissertation is to determine the influence of different methods on the precision of indirect restorations and the clinical attachment level in the respective area. To achieve the aim, **3 tasks** have been set, and they are completely sufficient.

Materials and methods

In the first and second in vitro tasks, class II indirect restorations were made on extracted premolars and molars of persons over 18 years of age – the observation units are the thickness of the cement layer at the gingival floor and the microleakage in the same area, respectively. The stages are as follows – fixation of the teeth, preparation of cavities, impression, fabrication and cementation of inlays, thermocycling, staining (only for task 2), embedding in resin, cutting the specimens, polishing and observation under a microscope.

In the third task, class II direct or indirect restorations were made on premolars and molars of persons over 18 years of age – the periodontal status of the teeth (level of gingival margin, clinical attachment level, probing depth) was compared during obturation and 6 months after that.

The results are processed using the statistical package IBM SPSS Statistics, Online Effect Size Calculator, Mann Whitney U test calculator, G*Power, and are presented in graphical and tabular form.

Results and discussion

Dr. Keremedchieva established for the **first task** that the different combinations of scanning technique, material used for the indirect restorations or cement for fixation do not have a significant influence on the marginal adaptation and the thickness of the cement layer formed at the gingival floor.

The results of the **second task** indicate that there is no microleakage at the composite cement – composite interface, and the composite cement is better than GIC in the fixation of ceramic inlays as well. Regarding the type of technique and type of material, no statistically significant differences in microleakage were noted in the studied groups.

According to the third task, the author confirms that 6 months after the direct or indirect restoration of class II defects with the subgingivally located gingival floor, the periodontal status of the teeth is better – the probing depth is reduced and clinical attachment level is gained. Better results are demonstrated by the classic indirect restoration technique, and ceramic is the most suitable material for work.

Characterization and assessment of the dissertation

The goal and set tasks have been accomplished. Out of the 9 conclusions made, I do not accept the formulation of the first and the second one.

Contributions and significance of the work for science and practice

Dr. Keremedchieva divides the contributions of her research into three groups – original, original for Bulgaria and confirmatory ones. I believe that this formulation and the contributions themselves can be accepted.

Assessment of the publications

The results of the study are promoted through 3 publications. Dr. Keremedchieva is the first author of all of them, which proves that the research is a personal work.

Abstract

The abstract of 55 pages is presented in the appropriate volume. It is well illustrated and presents the individual sections of the dissertation.

Critical remarks and recommendations

My comments to the candidate are as follows:

- the used abbreviations are not described in the correct order;
- the hypotheses themselves are not described anywhere in the results;
- the discussion of the results is scarce;
- the first two conclusions resemble a description of the researched material;
- the author doesn't follow a uniform model for describing the sources in the bibliographic reference; four of the sources are in Bulgarian (№125, 166, 253, 269), but they are presented as foreign ones;
- the structure of the abstract does not follow that of the dissertation.

CONCLUSION

Dr. Sabina Plamenova Keremedchieva, doctoral student and an assistant professor at the Department of Periodontology and dental implantology at the Faculty of Dental Medicine – Varna has submitted for statement a completed dissertation.

The dissertation meets the criteria for acquiring the educational and scientific degree "Doctor of Philosophy", set out in the Law for development of the academic staff in the Republic of Bulgaria, the Regulations for its implementation, and the Regulations for the development of the academic staff at MU – Varna.

This gives me grounds for **positive assessment and I propose to the esteemed Scientific Jury to award the educational and scientific degree “Doctor of Philosophy”** to Dr. Sabina Plamenova Keremedchieva in scientific specialty of Therapeutic Dentistry.

Varna

28/04/2024

Заличено на основание чл. 5,
§1, б. „В“ от Регламент (ЕС)
2016/679

(Assoc. Prof. Miglena Balcheva-Eneva, DMD, PhD)