Statement

by

Prof. Dr. Stefan Vasilev Peev, DMD, PhD, DSc

Department " Periodontology and Dental implantology", Faculty of Dental Medicine: Dean of Faculty of Dental Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna, habilitated in the professional domain 7.2 Dental medicine, Medical university – Varna, memnber of the Scientific Jury, according to an order of the Rector of Medical University- Varna № P-109-298/24.09.2024г.

Subject:

PhD thesis of Dr. Gabriela Rosenova Kirova, a full time PhD student, according to an order of the Rector of Medical University – Varna, № P-109-353/06.11.2020, with the topic: „**Laboratory Investigation of the Accuracy of Cemented Superstructures on Abutments Manufactured Using Different Impression Taking Protocols**" for the award of the educational and scientific degree "Doctor (PhD) in the PhD programme " Orthopedic dental medicine", Professional domain 7.2 Dental medicine.

Scientific Supervisors: Assoc. Prof. Dr. Stoyan Georgiev Katsarov, DMD, PhD

Brief biographical data of the doctoral student:

Dr. Gabriela Rosenova Kirova was born on March 9, 1993, in Varna. In 2023, she graduated from the IV Language High School "Frédéric Joliot-Curie." In 2019, she received her Master's degree in Dental Medicine from the Faculty of Dental Medicine at the Medical University of Varna with excellent academic performance. That same year, Dr. Gabriela Kirova was appointed as a full-time assistant at the Department of Dental Materials Science and Prosthetic Dental Medicine, and she also began practicing as a dental physician at the University Medical and Dental Center (UMDC). From 2020 to 2023, she specialized in prosthetic dental medicine, and in December 2023, she successfully passed her state examination for her specialization. In November 2020, she was enrolled as a full-time doctoral student in the "Orthopedic Dentistry" doctoral program at the Medical University of Varna. She teaches the disciplines "Propaedeutics to Prosthetic Dental Medicine" and "Clinical Prosthetic Dental Medicine."

Relevance and structure of the dissertation

Given the advancement and establishment of digitalization in prosthetic dentistry, the study of the accuracy of implant-supported structures manufactured using different technologies and information transfer methodologies is highly relevant.

The presented dissertation, titled „Laboratory Investigation of the Accuracy of Cemented Superstructures on Abutments Manufactured Using Different Impression Taking Protocols" is developed in accordance with the requirements for obtaining the academic and educational degree of "Doctor." It is properly structured, containing 191 pages, and is illustrated with 20 tables, 105 figures, and 3 appendices. The dissertation includes the essential sections: Introduction – 2 pages, Literature Review – 35 pages, Aim and Tasks – 1 page, Materials and Methods – 26 pages, Results and Discussion – 85 pages, Conclusions – 2 pages, Conclusion– 1 page, Contributions – 2 pages, and Publications related to the dissertation. The reference list comprises 299 sources, of which 23 are in Cyrillic and 276 in Latin script.

The introduction emphasizes the importance of implant-prosthetic treatment for preserving dental hard tissues and bone structure, as well as the growing role of digitalization and the need for precision in the fabrication of implant-supported prosthetic constructions.

The literature review is comprehensive, clearly structured, and follows a logical sequence, analyzing all key aspects related to the study. Based on this analysis, hypotheses have been formulated to support the defined aims and tasks.

The aim of this dissertation is to conduct a comparative assessment of the accuracy of superstructures fabricated using different methods and impression-taking protocols, cemented onto abutments, and measured on microsections of laboratory microgrinds.

The aim and tasks are formulated in accordance with the thematic focus of the dissertation and are logically interconnected. The achievement of the aim has been accomplished through four tasks, with each task comprising two subgroups. The tasks are precisely defined and allow for appropriate statistical analysis.

To achieve the tasks, a well-selected experimental methodology has been employed, ensuring a high degree of accuracy and validity of the results, thereby supporting a reliable interpretation of the data.

The results are analyzed and described in detail and clearly, illustrated with sufficient tables and graphs. The discussion is conducted objectively.

The conclusion and conclusions of the study are formulated logically and substantiated. The conclusions synthesize the collected data and highlight the significant differences between the methodologies employed.

There are seven contributions, which are correctly presented in groups with scientific-applied and applied characteristics:

Scientific and applied contributions

Original contributions

1.For the first time in our country, a methodology has been developed to standardize the technology for investigating the adaptation accuracy of fixed superstructures using a machine for hard cuts.

2. It has been established that the strategy using a scanning analogue provides higher accuracy compared to the method of scanning the abutment.

3. It has been established that the marginal adaptation and fit accuracy, which need to be ensured during treatment with implant superstructures, are achieved with both scanning methodologies and manufacturing technologies. The combination of the scanning method and the manufacturing process are ranked according to the achieved accuracy. First is the group of scan body and milling, followed by scanning of abutments and milling, scan body and selective laser melting, and scanning of abutments and selective laser melting.

Confirming contributions:

1. The use of scan bodies provides better marginal adaptation and fit accuracy of implant suprastructures compared to scanning abutments, and this applies to both manufacturing technologies—milling and selective laser melting.

2. The geometric and optical characteristics of the scan bodies are key factors influencing the achievement of higher scanning precision and more accurate transfer of implant positions compared to abutments.

Applicable contributions:

1. A newly developed methodology for creating spicemens for studying marginal adaptation and fit accuracy has been proposed, which can be used for future similar studies.

2. A classification of the combination of scanning method and manufacturing technology based on fit accuracy has been proposed, which can be successfully utilized in clinical practice.

A list of three scientific publications related to the dissertation has been presented in English, which is a sufficient number.

"The abstract has been prepared in accordance with the requirements of the Medical University of Varna. It contains 72 pages and is adequately illustrated with a sufficient number of photographs, graphs, and figures, presenting a concise summary of the dissertation developed by Dr. Kirova."

The dissertation has been conducted under the guidance of her scientific advisor, Assoc. Prof. Dr. Stoyan Katsarov, DMD, PhD. Dr. Gabriela Kirova demonstrates theoretical knowledge and an analytical approach in conducting the research, providing a thorough and comprehensive interpretation of the obtained results.

Conclusion

Dr. Gabriela Kirova's dissertation, titled „Laboratory Investigation of the Accuracy of Cemented Superstructures on Abutments Manufactured Using Different Impression Taking Protocols" is a contemporary scientific work that meets all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the corresponding regulations of the Medical University of Varna for obtaining the academic degree of "Doctor."

The author demonstrates knowledge in the field and the ability to conduct independent scientific research.

I give my **positive** assessment before the esteemed Academic Jury for awarding the educational and scientific degree of "Doctor" to Dr. Gabriela Rosenova Kirova in the doctoral program "Orthopedic Dentis

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

Prof. Dr. Stefan Peev, DMD, PhD, DSc.

05.11.2024