



TO THE CHAIRMAN AND THE MEMBERS OF THE SCIENTIFIC JURY APPOINTED BY ORDER No. P1825/22.07.2022 OF THE RECTOR OF MU-PLOVDIV FOR THE COMPETITION FOR THE ACADEMIC POSITION OF DOCTOR IN THE DEPARTMENT OF PROSTHETIC DENTAL MEDICINE, FDM, MU-PLOVDIV

Opinion

by Assoc. Dr. Nikolay Asenov Apostolov, Ph.D

MU-Sofia, FDM, "St. G. Sofia" 1, 1431

of a dissertation for awarding the educational and scientific degree 'doctor'

professional direction "Dental Medicine"

doctoral program "Prosthetic Dental medicine"

Author: Dr. Magdalina Ivanova Urumova

Form of doctoral studies: independent preparation

Department: "Prosthetic Dentistry"

Topic: "Laboratory study of the holding power of telescope crowns made by different methods"

Scientific header: Assoc. Dr. Ilian Hristov, PhD, Department of Prosthetic Day-Tal Medicine, FDM, MU-Plovdiv

I. General presentation

The structure of the dissertation presented for review meets the requirements of the RASRB and the Regulations for its application in the Regulations of the MU-Plovdiv and contains the subheadings: introduction, abbreviations, literature review, analysis of lit. overview, aim and tasks, own research - material and methods, results and discussion of the results, conclusions, contributions, bibliography, appendices. The author's publications in connection with the dissertation work and the contributions of the dissertation work are presented in the abstract:

Publications in scientific specialized publications:

Scientific publications:

1. Urumova M., Todorov R., Zlatev St., Aleksandrov St.,; Apparatus for mechanical cyclic loading of test specimens., ICYS 2020-Plovdiv, Series G. Medicine, Pharmacy and Dental medicine, Vol. XXV ISSN 1311-9427 (PRINT) ISSN 2534-9392 (ON-LINE) p.335-341

2. Urumova M., Alexandrov Sv., Vasileva E.,; "Questionnaire Study among Doctors of Dental Medicine on the Applications of Telescopic Crowns", Journal of International Dental and Medical Research, issue 2021; volume 14 number 3

3. Urumova M., Alexandrov Sv., Vasileva E.; " WORKING WITH TELESCOPIC CROWNS – A SURVEY AMONG DENTAL TECHNICIANS", IJCAR-12748/2021, ISSN: O: 2319-6475, ISSN: P: 2319-6505, Available Online at www.journalijcar.org Volume 10; Issue 12 (A); December 2021; Page No. 25619-25622

Contributions

1. Urumova M., Todorov G., Zlatev St.; "Methods to ensure the retention of crowns with telescope. Literature review.", Scientific congress "Science and practice - hand in hand" - Plovdiv, 2019.

2. Urumova M., Zlatev St., Todorov G.; "Comparative study of the retention force at telescope crowns", poster presentation, Pomorie 2019, BZS Congress

3. Urumova M., Todorov R., Zlatev St., Aleksandrov St.,; Apparatus for mechanical cyclic loading of test specimens., ICYS 2020-Plovdiv

4. Urumova M., Zlatev St., Todorov R.; "Apparatus for mechanical cyclic loading", Scientific congress "Science and practice - hand in hand" - Plovdiv, 2020

The dissertation, presented to me for review, is written on 156 pages and is illustrated with 32 tables, 106 figures and appendices. The bibliography includes 224 literary sources, of which 21 are in Cyrillic and the rest in Latin.

The dissertation is structured as follows: 2 pages of used abbreviations, 2 pages of introduction, 28 pages of literature review, 1 page of aims and objectives, 103 pages of own research and their summary, bibliography (there are non-essential and uncorrected spelling errors , pagination and ordering).

II. Dissertation:

1. Relevance of the topic:

The actuality of the developed problem in a scientific and scientific-applied sense is emphasized in the introduction of the dissertation, as the topic regarding the specifics of combined dental prosthetics, in particular with telescope crowns, is touched upon.

2. Knowing the problem:

In the literature review, an analysis of various metal alloys and methods for the manufacture of telescope crowns was made. Dr. Urumova points out the various resolved, known and debatable issues. From the analysis, it is clear that the question of the medical-biological and technological qualities of the various metal alloys and methods for the manufacture of the telescope crowns is insufficiently studied. Unfortunately, in the overview, there are some figures of poor quality, and their exactness is required for a dissertation work (eg fig. 2 - cropped, fig. 4 with light shadow from a camera).

3. Material and Research Methods:

The aim and set tasks are well formulated, correspond to the title and content of the dissertation work.

The material on which the research was conducted is sufficient to derive statistically reliable scientific results. For the purposes of my presented dissertation, the following methods were carried out:

First task: A survey was conducted among dental technicians and dentists. The number of dental technicians is 65, and the number of dentists is 208. The obtained data were processed with the corresponding static methods.

Second task: A methodology was created for making telescope-crowns with two additional retentive elements - a chute and a hemisphere, ensuring good retention.

Third task: A mechanical-cyclic laboratory study of the retention of the telescope-crowns was carried out, and the studies were carried out in a special environment of artificial saliva.

Fourth task: A proprietary methodology for researching the holding power of telescopes was created, according to the type of sample, and is composed of two subtasks.

The researched material, as well as the methods applied for the purpose, are a prerequisite for obtaining reliable and valuable scientific results

4. Characterization and evaluation of the dissertation work and contributions:

The results obtained for all four tasks (with minor exceptions for the second task) are reliable, correctly statistically processed and comprehensively presented in the dissertation. Regarding the first task, it is striking to note that the most common manufacturing method preferred by dental technicians is model casting, as well as the preferred alloys for this purpose. The data regarding the height of the primary telescope are also interesting. On the second task there are results, but not yet statistically protected. According to the third task, the device for cyclic mechanical loading developed by Dr. Urumova and her team has a wide application in in-vitro research and I recommend that it be applied for at least a useful model in the Patent Office. Regarding the fourth task, the finding of the aggregated values of the tests showing that the minimum retention value is 1 N and the maximum 3.33 N is curious.

In the discussion of the results, a comparative analysis was carried out with similar scientific studies of other authors, and the reasons for the difference or coincidence of the established data were

highlighted. The results, which are the contribution of the doctoral student and are important in scientific and applied terms, are highlighted.

The conclusions are well formulated and emphasize the significance of the dissertation work:

1. Very few dentists in the country use telescope-crowns as a supporting and retaining element in their daily practice.
2. The majority of dental technicians who took part in the survey prefer techniques such as model-casting and milling for making telescope-crowns.
3. A large part of the surveyed dental technicians did not apply the innovative techniques for making telescope-crowns.
4. The created apparatus for cyclic-mechanical loading through the container for artificial saliva, approaches the conditions in the oral cavity.
5. The created apparatus for cyclic mechanical loading is also applicable to other prosthetic elements.
6. Using the modified method created, the retention between the primary and secondary telescopes is much better than using the USIG-foil system.
7. The data from the study of the samples of the first group (classical) and the second group (FGP) after being subjected to cyclic mechanical loading of 6000 cycles shows that the samples of the second group (FGP system) have better retention when tested with the device.
8. The data obtained from the study of the samples from the four groups after being subjected to a mechanical-cyclic load of 6000 cycles indicate that in the samples from the fourth d group made according to the method developed by the team (with a taper angle of 0° and a height of the telescope of 5 mm) the force of retention was the best compared to all other groups.
9. The wear resistance of the experimental samples decreases with an increase in the number of cycles of mechanical cyclic loading, regardless of the applied methodology.
10. The modified method created by the collective is applicable among patients.

The candidate's contributions prove the quality of the scientific development:

Contributions of a confirmatory nature

It is conclusively proven that the wear resistance between the primary and secondary crown telescopes decreases over time.

Strict compliance with the phasing of the protocol in the technological manufacture of the telescope-crowns leads to their accuracy and level of retention.

Contributions of a topical nature

For the first time in Bulgaria, a survey was conducted on the awareness of the knowledge, application and technologies for making telescope-crowns by dentists and dental technicians.

For the first time in our country, a laboratory bench for mechanical-cyclic loading of experimental samples has been made.

For the first time in our country, the retention potential of telescope-crowns is being investigated through tensile tests in different regimes and specially made for the research holding elements (playing the role of jaws).

Contributions of a scientific and applied nature

It has been proven that the laboratory bench for mechanical cyclic loading of test specimens is also applicable to other complex prosthetic structures that require loading along the longitudinal tooth axis.

It has been proven that the proposed and clinically approved method, including additional elements, leads to good retention of the telescope crowns.

It has been proven that the design of the primary and secondary telescope-crown using CAD/CAM technology can be carried out simultaneously.

5. Assessment of the publications and personal contribution of the doctoral student

The publications related to the dissertation represent the most essential parts of the dissertation work, and the contributions of the doctoral student are yet to prove their importance for the development of this specific scientific topic

6. Abstract

The content and quality of the auto-reference are in accordance with the accepted requirements. The abstract reflects in abbreviated form the main results achieved in the dissertation.

III. Critical remarks and recommendations.

My critical remarks are related to the lack of corrections of some errors pointed out during the internal defense by the supervisor and reviewers. These errors are not essential, they do not interfere with the defense of the dissertation work, but they reduce its value. My recommendations to the candidate are related to more consistent and thorough scientific work in the future, as well as respect for the constructive criticism of people with more serious scientific experience.

CONCLUSION

The dissertation contains scientific, scientific-applied and applied results, which represent an original contribution to science and meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria the Regulations for the Implementation of and the Regulations of the Ministry of Education - Plovdiv. The presented materials and dissertation results fully correspond to the specific requirements adopted in connection with the Regulations of the Ministry of Education - Plovdiv for the application of the low.

The dissertation shows that the doctoral student Dr. Urumova possesses the necessary theoretical knowledge and professional skills at this stage in the scientific specialty "Prosthetic Dentistry", and has conducted a satisfactory scientific research, the invaluable help of the scientific supervisor being evident.

Due to the above, despite some minor remarks, I will vote **YES** and give my positive assessment for awarding the educational and scientific degree 'Doctor' in the doctoral program in "Prosthetic Dentistry" for the scientific research conducted by Dr. Urumova.

18.08.2022

Prepared the opinion:



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

Associate Professor Nikolay Apostolov, Ph.D